SEQUENCE LISTING

	SEQUENCE LISTING	
<110>	The Government of the United States of America as represented by the Secretary of the Department of Health and Human Services Drayna, Dennis Kim, Un-kyung	
<120>	VARIANTS OF HUMAN TASTE RECEPTOR GENES	
	4239-66168-02	
<150> <151>	US 60/480,035 2003-06-19	
<160>	264	
<170>	PatentIn version 3.2	
<210> <211> <212> <213>	1 900 DNA Homo sapiens	
<220> <221> <222>	CDS (1)(900)	
<220> <221> <222> <223>	variation (332)(332) r is g or a	
<220> <221> <222> <223>	variation (616)(616) y is t or c	
<400>		
Met Leu 1	gag tct cac ctc att atc tat ttt ctt ctt gca gtg ata caa 48 Glu Ser His Leu Ile Ile Tyr Phe Leu Leu Ala Val Ile Gln 5 10 15	
	ctt ggg att ttc aca aat ggc atc att gtg gtg gtg aat ggc 96 Leu Gly Ile Phe Thr Asn Gly Ile Ile Val Val Val Asn Gly 20 25 30	
_	ttg atc aag cac aga aaa atg gct ccg ctg gat ctc ctt ctt Leu Ile Lys His Arg Lys Met Ala Pro Leu Asp Leu Leu Leu 35 40	
50	ctg gca gtt tct aga att ttt ctg cag ttg ttc atc ttc tac 192 Leu Ala Val Ser Arg Ile Phe Leu Gln Leu Phe Ile Phe Tyr 55 60	
65	gtg att gtt atc ttc ttc ata gaa ttc atc atg tgt tct gcg 240 Val Ile Val Ile Phe Phe Ile Glu Phe Ile Met Cys Ser Ala 70 75 80	
aat tgt	gca att ctc tta ttt ata aat gaa ttg gaa ctt tgg ctt gcc 288	

										2/4	47						
										90					95		
				10	0		,,	- Oy	10	а цу 5	s va	T AT	a Se	r Va. 11	l Xa O	t cad a His	3
			11.	5	•	•		12	0	a. 11	e se	с гу	s Let 125	ı Va.	l Pro	a tgg o Trp)
		130)		•		135	5	r val	. se	r Met	140	e Cys O	Va]	L Phe	cat His	
	145	;			•	150)	, , ,	- 110	, 1Å1	155	э тег	ı Arg	Lys	3 Phe	ttc Phe 160	
					165	5		. Dya	, GIU	170)	Let	ı Ala	Ile	Gln 175		
				180)		0	001	185	PIC	ь Leu	Leu	Ile	Phe 190	Léu	ttt Phe	576
j	gct Ala	gtt Val	ttg Leu 195	Leu	ttg Leu	att Ile	ttc Phe	tct Ser 200	204	GJ Ā āāā	agg Arg	cac His	acc Thr 205	cgg Arg	caa Gln	atg Met	624
Ž	aga Arg	aac Asn 210	aca Thr	gto Val	gcc Ala	ggc Gly	agc Ser 215	agg Arg	gtt Val	cct Pro	ggc Gly	agg Arg 220	ggt Gly	gca Ala	ccc Pro	atc Ile	672
2	agc Ser 225	gcg Ala	ttg Leu	ctg Leu	tct Ser	atc Ile 230	ctg Leu	tcc Ser	ttc Phe	ctg Leu	atc Ile 235	ctc Leu	tac Tyr	ttc Phe	tcc Ser	cac His 240	720
t	gc Cys	atg Met	ata Ile	aaa Lys	gtt Val 245	ttt Phe	ctc Leu	tct Ser	tct Ser	cta Leu 250	aag Lys	ttt Phe	cac His	atc Ile	aga Arg 255	agg Arg	768
P	tc he	atc Ile	ttt Phe	ctg Leu 260	ttc Phe	ttc Phe	atc Ile	ctt Leu	gtg Val 265	att Ile	ggt Gly	ata Ile	tac Tyr	cct Pro 270	tct Ser	gga Gly	816
Н	ac	tct Ser	ctc Leu 275	atc Ile	tta Leu	att Ile		gga Gly 280	aat Asn	cct Pro	aaa Lys	ttg Leu	aaa Lys 285	caa Gln	aat Asn	gca Ala	864
a L	-	aag Lys 290	ttc Phe	ctc Leu	ctc Leu	cac His	agt Ser 295	aag Lys	tgc Cys	tgt Cys	cag Gln	tga					900

<210> 2 <211> 299 <212> PRT <213> Homo sapiens <220>

<221> misc_feature

<222> (111)..(111)

<223> The 'Xaa' at location 111 stands for Arg, or His.

<400> 2

Met Leu Glu Ser His Leu Ile Ile Tyr Phe Leu Leu Ala Val Ile Gln 1 5 10 15

Phe Leu Leu Gly Ile Phe Thr Asn Gly Ile Ile Val Val Asn Gly 20 25 30

Ile Asp Leu Ile Lys His Arg Lys Met Ala Pro Leu Asp Leu Leu S 40 45

Ser Cys Leu Ala Val Ser Arg Ile Phe Leu Gln Leu Phe Ile Phe Tyr 50 55 60

Val Asn Val Ile Val Ile Phe Phe Ile Glu Phe Ile Met Cys Ser Ala 65 70 75 80

Asn Cys Ala Ile Leu Leu Phe Ile Asn Glu Leu Glu Leu Trp Leu Ala 85 90 95

Thr Trp Leu Gly Val Phe Tyr Cys Ala Lys Val Ala Ser Val Xaa His 100 105 110

Pro Leu Phe Ile Trp Leu Lys Met Arg Ile Ser Lys Leu Val Pro Trp 115 120 125

Met Ile Leu Gly Ser Leu Leu Tyr Val Ser Met Ile Cys Val Phe His 130 135 140

Ser Lys Tyr Ala Gly Phe Met Val Pro Tyr Phe Leu Arg Lys Phe Phe 145 150 155 160

Ser Gln Asn Ala Thr Ile Gln Lys Glu Asp Thr Leu Ala Ile Gln Ile 165 170 175

Phe Ser Phe Val Ala Glu Phe Ser Val Pro Leu Leu Ile Phe Leu Phe 180 185 190

Ala Val Leu Leu Leu Ile Phe Ser Leu Gly Arg His Thr Arg Gln Met 195 200 205

Arg Asn Thr Val Ala Gly Ser Arg Val Pro Gly Arg Gly Ala Pro Ile 210 215 220

Ser Ala Leu Leu Ser Ile Leu Ser Phe Leu Ile Leu Tyr Phe Ser His 225 230 235 240	
Cys Met Ile Lys Val Phe Leu Ser Ser Leu Lys Phe His Ile Arg Arg 245 250 255	
Phe Ile Phe Leu Phe Phe Ile Leu Val Ile Gly Ile Tyr Pro Ser Gly 260 265 270	
His Ser Leu Ile Leu Ile Leu Gly Asn Pro Lys Leu Lys Gln Asn Ala 275 280 285	
Lys Lys Phe Leu Leu His Ser Lys Cys Cys Gln 290 295	
<210> 3 <211> 951 <212> DNA <213> Homo sapiens	
<220> <221> CDS <222> (1)(951)	
<220> <221> variation <222> (349)(349) <223> y is t or c	
<220> <221> variation <222> (807)(807) <223> y is t or c	
<220> <221> variation <222> (852)(852) <223> y is t or c	
<pre><400> 3 atg atg gga ctc acc gag ggg gtg ttc ctg att ctg tct ggc act cag Met Met Gly Leu Thr Glu Gly Val Phe Leu Ile Leu Ser Gly Thr Gln 1</pre>	48
ttc aca ctg gga att ctg gtc aat tgt ttc att gag ttg gtc aat ggt Phe Thr Leu Gly Ile Leu Val Asn Cys Phe Ile Glu Leu Val Asn Gly 20 25 30	96
agc agc tgg ttc aag acc aag aga atg tct ttg tct gac ttc atc atc Ser Ser Trp Phe Lys Thr Lys Arg Met Ser Leu Ser Asp Phe Ile Ile 35 40 45	144
acc acc ctg gca ctc ttg agg atc att ctg ctg tgt att atc ttg act	192

									5/44							
											60	ı			u Thr	
65					70			- FT(J ASI	75	r Hi	s As	p Se	r Gl	g ata y Ile 80	
				85			. 501	- +-1	90	. Pne	e Th	r As:	n Hi	s Le 95	g agc u Ser	288
			100)		200	. O.L.y	105	. тес	туз	г Су	s Le	ц L y: 11	s Il O	c gcc e Ala	336
		115	i				120	111	, тес	г тАг	s Tr	p Ard	g Vai	l Se:	t agg r Arg	384
	130)	_			135	CLy	vra	ьеи	ret	ьеі 14(u Sei O	Cy:	s Gly	agt Ser	432
145	;				150	OLU	1116	пўз	ьeu	155	: Sei	r Val	. Ph∈	Arc	g gga g Gly 160	480
				165	-1011	V 4 1	T 11.L	GIU	170	Pne	Arc	J Lys	Lys	Arg 175		528
		_	180			val	шeu	185	inr	тел	Trp	Tyr	Leu 190	Pro	ccc	576
		195		_		501	200	361	ьец	Leu	11e	Phe 205	Ser	Leu	GTA aaa	624
agg Arg	cac His 210	aca Thr	cgg Arg	cag Gln	atg Met	ctg Leu 215	caa Gln	aat Asn	GTÅ aaa	aca Thr	agc Ser 220	Ser	aga Arg	gat Asp	cca Pro	672
acc Thr 225	act Thr	gag Glu	gcc Ala	cac His	aag Lys 230	agg Arg	gcc Ala	atc Ile	aga Arg	atc Ile 235	atc Ile	ctt Leu	tcc Ser	ttc Phe	ttc Phe 240	720
ttt Phe	ctc Leu	ttc Phe	tta Leu	ctt Leu 245	tac Tyr	ttt Phe	ctt Leu	gct Ala	ttc Phe 250	tta Leu	att Ile	gca Ala	tca Ser	ttt Phe 255	ggt Gly	768
aat Asn	ttc Phe	cta Leu	cca Pro 260	aaa Lys	acc Thr	aag Lys :	Mec	gct Ala 265	aag Lys	atg Met	att Ile	ggy Xaa	gaa Glu 270	gta Val	atg Met	816
aca Thr	atg Met	ttt Phe 275	tat Tyr	cct Pro	gct (Ala (-Ly	cac His 280	tca Ser	ttt Phe	att Ile	cty Xaa	att Ile 285	ctg Leu	GJA aaa	aac Asn	864
agt Ser	aag Lys	ctg Leu	aag Lys	cag Gln	aca f	ttt o	gta v	gtg Val 1	atg Met	ctc Leu	cgg Arg	tgt Cys	gag Glu	tct Ser	ggt Gly	912

290 295 300

cat ctg aag cct gga tcc aag gga ccc att ttc tct tag His Leu Lys Pro Gly Ser Lys Gly Pro Ile Phe Ser 951 310

<210> 4

<211> 316 <212> PRT <213> Homo sapiens

<220>

<221> misc_feature

<222> (117)..(117)

<223> The 'Xaa' at location 117 stands for Pro, or Ser.

<220>

<221> misc_feature

<222> (269)..(269)

<223> The 'Xaa' at location 269 stands for Gly.

<220>

<221> misc_feature

<222> (284)..(284)

<223> The 'Xaa' at location 284 stands for Leu.

<400> 4

Met Met Gly Leu Thr Glu Gly Val Phe Leu Ile Leu Ser Gly Thr Gln

Phe Thr Leu Gly Ile Leu Val Asn Cys Phe Ile Glu Leu Val Asn Gly

Ser Ser Trp Phe Lys Thr Lys Arg Met Ser Leu Ser Asp Phe Ile Ile

Thr Thr Leu Ala Leu Leu Arg Ile Ile Leu Leu Cys Ile Ile Leu Thr

Asp Ser Phe Leu Ile Glu Phe Ser Pro Asn Thr His Asp Ser Gly Ile 70

Ile Met Gln Ile Ile Asp Val Ser Trp Thr Phe Thr Asn His Leu Ser

Ile Trp Leu Ala Thr Cys Leu Gly Val Leu Tyr Cys Leu Lys Ile Ala

Ser Phe Ser His Xaa Thr Phe Leu Trp Leu Lys Trp Arg Val Ser Arg 120

Val Met Val Trp Met Leu Leu Gly Ala Leu Leu Leu Ser Cys Gly Ser 130 140

Thr Ala Ser Leu Ile Asn Glu Phe Lys Leu Tyr Ser Val Phe Arg Gly
145 150 155 160

Ile Glu Ala Thr Arg Asn Val Thr Glu His Phe Arg Lys Lys Arg Ser 165 170 175

Glu Tyr Tyr Leu Ile His Val Leu Gly Thr Leu Trp Tyr Leu Pro Pro 180 185 190

Leu Ile Val Ser Leu Ala Ser Tyr Ser Leu Leu Ile Phe Ser Leu Gly
195 200 205

Arg His Thr Arg Gln Met Leu Gln Asn Gly Thr Ser Ser Arg Asp Pro 210 215 220

Thr Thr Glu Ala His Lys Arg Ala Ile Arg Ile Ile Leu Ser Phe Phe 225 230 235 240

Phe Leu Phe Leu Tyr Phe Leu Ala Phe Leu Ile Ala Ser Phe Gly 245 250 255

Asn Phe Leu Pro Lys Thr Lys Met Ala Lys Met Ile Xaa Glu Val Met 260 265 270

Thr Met Phe Tyr Pro Ala Gly His Ser Phe Ile Xaa Ile Leu Gly Asn 275 280 285

Ser Lys Leu Lys Gln Thr Phe Val Val Met Leu Arg Cys Glu Ser Gly 290 295 300

His Leu Lys Pro Gly Ser Lys Gly Pro Ile Phe Ser 305 310 315

<210> 5

<211> 900

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(900)

<220>

<221> variation

<222> (8)..(8)

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 $\langle 223 \rangle$ y is t or c \cdot <220> <221> variation <222> (20)..(20) <223> y is t or c <220> <221> variation <222> (186)..(186) <223> w is t or a <220> <221> variation <222> (286)..(286) <223> s is c or g <220> <221> variation <222> (512)..(512) <223> r is a or g <400> 5 atg ctt crs tta ttc tat tyc tct gct att att gcc tca gtt att tta 48 Met Leu Xaa Leu Phe Tyr Xaa Ser Ala Ile Ile Ala Ser Val Ile Leu aat ttt gta gga atc att atg aat ctg ttt att aca gtg gtc aat tgc Asn Phe Val Gly Ile Ile Met Asn Leu Phe Ile Thr Val Val Asn Cys 96 aaa act tgg gtc aaa agc cat aga atc tcc tct tct gat agg att ctg 144 Lys Thr Trp Val Lys Ser His Arg Ile Ser Ser Ser Asp Arg Ile Leu ttc agc ctg ggc atc acc agg ttt ctt atg ctg gga cta ttw ctg gtg 192 Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Xaa Leu Val 50 aac acc atc tac ttc gtc tct tca aat acg gaa agg tca gtc tac ctg 240 Asn Thr Ile Tyr Phe Val Ser Ser Asn Thr Glu Arg Ser Val Tyr Leu tct gct ttt ttt gtg ttg tgt ttc atg ttt ttg gac tcg agc agt stc 288 Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Xaa tgg ttt gtg acc ttg ctc aat atc ttg tac tgt gtg aag att act aac 336 Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn 105 ttc caa cac tca gtg ttt ctc ctg ctg aag cgg aat atc tcc cca aag Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys 384 115 120 ate eee agg etg etg etg gee tgt gtg etg att tet get tte ace act 432 Ile Pro Arg Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr tgc ctg tac atc acg ctt agc cag gca tca cct ttt cct gaa ctt gtg 480 Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val

9/447

145	150		155	160
act acg aga aa Thr Thr Arg As	at aac aca tca sn Asn Thr Ser 165	ttt aat atc Phe Asn Ile 170	art gag ggc atc Xaa Glu Gly Ile	ttg tct 528 Leu Ser 175
TOR 181 AUT DE	ct ttg gtc ttg er Leu Val Leu 30	agc tca tct Ser Ser Ser 185	ctc cag ttc atc Leu Gln Phe Ile 190	att aat 576 Ile Asn
gtg act tct go Val Thr Ser Al 195	ct tcc ttg cta la Ser Leu Leu	ata cac tcc Ile His Ser 200	ttg agg aga cat Leu Arg Arg His 205	ata cag 624 Ile Gln
aag atg cag aa Lys Met Gln Ly 210	aa aat gcc act ys Asn Ala Thr 215	ggt ttc tgg Gly Phe Trp	aat ccc cag acg Asn Pro Gln Thr 220	gaa gct 672 Glu Ala
cat gta ggt go His Val Gly Al 225	ct atg aag ctg La Met Lys Leu 230	Met Val Tyr	ttc ctc atc ctc Phe Leu Ile Leu 235	tac att 720 Tyr Ile 240
cca tat tca gt Pro Tyr Ser Va	t gct acc ctg al Ala Thr Leu 245	gtc cag tat Val Gln Tyr 250	ctc ccc ttt tat Leu Pro Phe Tyr	gca ggg 768 Ala Gly 255
atg gat atg gg Met Asp Met Gl 26	ry inr Lys Ser	att tgt ctg Ile Cys Leu 265	att ttt gcc acc Ile Phe Ala Thr 270	ctt tac 816 Leu Tyr
tct cca gga ca Ser Pro Gly Hi 275	at tot gtt oto s Ser Val Leu	att att atc Ile Ile Ile 280	aca cat cct aaa Thr His Pro Lys 285	ctg aaa 864 Leu Lys
aca aca gca aa Thr Thr Ala Ly 290	ng aag att ctt vs Lys Ile Leu 295	tgt ttc aaa Cys Phe Lys	aaa tag Lys	900
<210> 6 <211> 299 <212> PRT <213> Homo sa	piens			
<220> <221> misc_fe <222> (3)(3 <223> The 'Xa)	3 stands fo	r Arg, Gln, or H	is.
<220> <221> misc_fe <222> (7)(7 <223> The 'Xa	ature) a' at location	7 stands fo	r Ser, or Phe.	
<220> <221> misc_fe <222> (62)(<223> The 'Xa	62)	62 stands fo	or Leu, or Phe.	
<220> <221> misc_fe	ature			

<222> (96)..(96)

<223> The 'Xaa' at location 96 stands for Val, or Leu.

<220>

<221> misc_feature

<222> (171)..(171)

<223> The 'Xaa' at location 171 stands for Ser, or Asn.

<400> 6

Met Leu Xaa Leu Phe Tyr Xaa Ser Ala Ile Ile Ala Ser Val Ile Leu 1 5 10 15

Asn Phe Val Gly Ile Ile Met Asn Leu Phe Ile Thr Val Val Asn Cys 20 25 30

Lys Thr Trp Val Lys Ser His Arg Ile Ser Ser Ser Asp Arg Ile Leu 35 40 45

Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Xaa Leu Val 50 60

Asn Thr Ile Tyr Phe Val Ser Ser Asn Thr Glu Arg Ser Val Tyr Leu 65 70 75 80

Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Xaa 85 90 95

Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn 100 105 110

Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys 115 120 125

Ile Pro Arg Leu Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr 130 135 140

Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val 145 150 155 160

Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Xaa Glu Gly Ile Leu Ser 165 170 175

Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn 180 185 190

Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln 195 200 205

Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala

His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile 230 235

Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly 245

Met Asp Met Gly Thr Lys Ser Ile Cys Leu Ile Phe Ala Thr Leu Tyr 260 265

Ser Pro Gly His Ser Val Leu Ile Ile Ile Thr His Pro Lys Leu Lys 275 280

Thr Thr Ala Lys Lys Ile Leu Cys Phe Lys Lys 295

<210> 7

<211> 900 <212> DNA <213> Homo sapiens

<220>

<221> CDS

<222> (1)..(900)

<220>

<221> variation <222> (77)..(77) <223> k is g or t

<220>

<221> variation <222> (235)..(235)

<223> y is t or c

<220>

<221> variation <222> (338)..(338)

<223> y is t or c

<220>

<221> variation

<222> (500)..(500)

<223> r is a or g

<220>

<221> variation

<222> (638)..(638)

<223> r is a or g

<220>

										• /							
<2	21> 22> 23>	(88)	iatio l) s g o	(881))												
ate Me				5		. Gry	пес	те:	10	Let	ı Val	L Ala	ı Val	. Val 15	: gaa . Glu		48
			20			, Gra	ASI	25	' Aae	тет	ı Val	. Val	. Trp 30	Ser	ttt Phe	•	96
•		35			, ayo	1116	40	irp	ser	Ser	туг	Asn 45	Lev	ı Ile	atc :Ile		144
	50			CLy	Cys	55	rne	ьeu	Leu	GIn	Trp 60	Leu	Ile	Ile	ttg Leu		192
65					70	Бец	rne	GIII	ser	Ser 75	Arg	Trp	Leu	Xaa	tat Tyr 80	:	240
				85	741	шец	Val	ser	90 GTD	ALA	Ser	Leu	Trp	Phe 95		2	288
acc Thr	ttc Phe	ctc Leu	agt Ser 100		ttc Phe	tat Tyr	tgc Cys	aag Lys 105	aag Lys	atc Ile	acg Thr	acc Thr	ttc Phe 110	gat Asp	cgc Arg	3	336
cyg Xaa	gcc Ala	tac Tyr 115	ttg Leu	tgg Trp	ctg Leu	aag Lys	cag Gln 120	agr Arg	gcc Ala	tat Tyr	aac Asn	ctg Leu 125	agt Ser	ctc Leu	tgg Trp	3	384
tgc Cys	ctt Leu 130	ctg Leu	Gly	tac Tyr	ttt Phe	ata Ile 135	atc Ile	aat Asn	ttg Leu	tta Leu	ctt Leu 140	aca Thr	gtc Val	caa Gln	att Ile	4	132
ggc Gly 145	tta Leu	aca Thr	ttc Phe	tat Tyr	cat His 150	cct Pro	ccc Pro	caa Gln	gga Gly	aac Asn 155	agc Ser	agc Ser	att Ile	cgg Arg	tat Tyr 160	4	80
ccc Pro	ttt Phe	gaa Glu	agc Ser	tgg Trp 165	cag Gln	trc Xaa	ctg Leu	tat Tyr	gca Ala 170	ttt Phe	cag Gln	ctc Leu	aat Asn	tca Ser 175	gga Gly	5	28
agt Ser	tat Tyr	ttg Leu	cct Pro 180	tta Leu	gtg Val	gtg Val	ttt Phe	ctt Leu 185	gtt Val	tcc Ser	tct Ser	gjå aaa	atg Met 190	ctg Leu	att Ile	5	76
		195	- -		•••	*****	200	пуз	Met	гÃг	Val	cat His 205	Ser	Ala	Gly	6	24
agg Arg	agg Arg 210	gat Asp	gtc Val	crg Xaa	gcc Ala	aag Lys 215	gct Ala	cac His	atc Ile	Thr	gcg Ala 220	ctg Leu	aag Lys	tcc Ser	ttg Leu	6	72

ggc tgc ttc ctc tta ctt cac ctg gtt tat atc atg gcc agc ccc ttc Gly Cys Phe Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe 225 230 235 240	720
tcc atc acc tcc aag act tat cct cct gat ctc acc agt gtc ttc atc Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile 245 250 255	768
tgg gag aca ctc atg gca gcc tat cct tct ctt cat tct ctc ata ttg Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu 260 265 270	816
atc atg ggg att cct agg gtg aag cag act tgt cag aag atc ctg tgg Ile Met Gly Ile Pro Arg Val Lys Gln Thr Cys Gln Lys Ile Leu Trp 275 280 285	864
aag aca gtg tgt gct ckg aga tgc tgg ggc cca tga Lys Thr Val Cys Ala Xaa Arg Cys Trp Gly Pro 290 295	900
<210> 8 <211> 299	
<212> PRT <213> Homo sapiens	
<pre><220> <221> misc_feature <222> (26)(26) <223> The 'Xaa' at location 36 stands 5</pre>	
at location 20 stands for Ser, or Ile.	
<220> <221> misc_feature	
<222> (79)(79)	
<223> The 'Xaa' at location 79 stands for Arg, or Cys.	
<220>	
<221> misc_feature	1
<223> The 'Xaa' at location 113 stands for Pro, or Leu.	•
<220>	
<221> misc_feature	
<222> (167)(167) <223> The 'Xaa' at location 167 stands for 5	
<223> The 'Xaa' at location 167 stands for Cys, or Tyr.	
<220> <221> misc_feature	
<222> (213)(213)	
<223> The 'Xaa' at location 213 stands for Arg, or Gln.	
<220>	
<221> misc_feature	
<pre><222> (294)(294) <223> The 'Xaa' at location 294 stands for Tree</pre>	
at location 254 Stands for Arg, or Leu.	
<400> 8	
Met Leu Ser Ala Gly Leu Gly Leu Leu Met Leu Val Ala Val Val Glu 1 5 10 15	

- Phe Leu Ile Gly Leu Ile Gly Phe Gly Asn Gly Xaa Leu Val Val Trp Ser Phe
 Arg Glu Trp 35 lle Arg Lys Phe Asn Trp Ser Ser Tyr Asn Leu Ile Ile
 Leu Gly Leu Ala Gly Cys Arg Phe Leu Leu Gln Trp 660 leu Ile Ile
 Asp Leu Ser Leu Phe Pro Leu Phe Gln Ser Ser Arg Trp Leu Xaa Tyr
 80
- Leu Ser Ile Phe Trp Val Leu Val Ser Gln Ala Ser Leu Trp Phe Ala 85 90 95
- Thr Phe Leu Ser Val Phe Tyr Cys Lys Lys Ile Thr Thr Phe Asp Arg 100 105 110
- Xaa Ala Tyr Leu Trp Leu Lys Gln Arg Ala Tyr Asn Leu Ser Leu Trp 115 120 125
- Cys Leu Leu Gly Tyr Phe Ile Ile Asn Leu Leu Leu Thr Val Gln Ile 130 135 140
- Gly Leu Thr Phe Tyr His Pro Pro Gln Gly Asn Ser Ser Ile Arg Tyr 145 150 155 160
- Pro Phe Glu Ser Trp Gln Xaa Leu Tyr Ala Phe Gln Leu Asn Ser Gly 165 170 175
- Ser Tyr Leu Pro Leu Val Val Phe Leu Val Ser Ser Gly Met Leu Ile 180 185 190
- Val Ser Leu Tyr Thr His His Lys Lys Met Lys Val His Ser Ala Gly
 195 200 205
- Arg Arg Asp Val Xaa Ala Lys Ala His Ile Thr Ala Leu Lys Ser Leu 210 215 220
- Gly Cys Phe Leu Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe 225 230 235 240
- Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile 245 250 255

Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu 260 265 270	
Ile Met Gly Ile Pro Arg Val Lys Gln Thr Cys Gln Lys Ile Leu Trp 275 280 285	
Lys Thr Val Cys Ala Xaa Arg Cys Trp Gly Pro 290 295	
<210> 9 <211> 957 <212> DNA <213> Homo sapiens	
<220> <221> CDS <222> (1)(957) <223> y is t or c	
<220> <221> variation <222> (788)(788) <223> y is t or c	
<pre><400> 9 atg gca gat aaa gtg cag act act tta ttg ttc tta gca gtt gga gag Met Ala Asp Lys Val Gln Thr Thr Leu Leu Phe Leu Ala Val Gly Glu 1 5 10 15</pre>	48
ttt tca gtg ggg atc tta ggg aat gca ttc att gga ttg gta aac tgc Phe Ser Val Gly Ile Leu Gly Asn Ala Phe Ile Gly Leu Val Asn Cys 20 25 30	· 96
atg gac tgg gtc aag aag agg aaa att gcc tcc att gat tta atc ctc Met Asp Trp Val Lys Lys Arg Lys Ile Ala Ser Ile Asp Leu Ile Leu 35 40 45	144
aca agt ctg gcc ata tcc aga att tgt cta ttg tgc gta ata cta tta Thr Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Leu Leu 50 55 60	192
gat tgt ttt ata ttg gtg cta tat cca gat gtc tat gcc act ggt aaa Asp Cys Phe Ile Leu Val Leu Tyr Pro Asp Val Tyr Ala Thr Gly Lys 65 70 75 80	240
gaa atg aga atc att gac ttc ttc tgg aca cta acc aat cat tta agt Glu Met Arg Ile Ile Asp Phe Phe Trp Thr Leu Thr Asn His Leu Ser 85 90 95	288
atc tgg ttt gca acc tgc ctc agc att tac tat ttc ttc aag ata ggt Ile Trp Phe Ala Thr Cys Leu Ser Ile Tyr Tyr Phe Phe Lys Ile Gly 100 105 110	336
aat ttc ttt cac cca ctt ttc ctc tgg atg aag tgg aga att gac agg Asn Phe Phe His Pro Leu Phe Leu Trp Met Lys Trp Arg Ile Asp Arg 115 120 125	384

										•							
gtg Val	att Ile 130	tcc Ser	tgg Trp	att Ile	cta Leu	ctg Leu 135	GJ A āāā	tgc Cys	gtg Val	gtt Val	ctc Leu 140	tct Ser	gtg Val	ttt Phe	att Ile	4	32
agc Ser 145	ctt Leu	cca Pro	gcc Ala	act Thr	gag Glu 150	aat Asn	ttg Leu	aac Asn	gct Ala	gat Asp 155	ttc Phe	agg Arg	ttt Phe	tgt Cys	gtg Val 160	4	80
aag Lys	gca Ala	aag Lys	agg Arg	aaa Lys 165	aca Thr	aac Asn	tta Leu	act Thr	tgg Trp 170	agt Ser	tgc Cys	aga Arg	gta Val	aat Asn 175	aaa Lys	5	28
act Thr	caa Gln	cat His	gct Ala 180	tct Ser	acc Thr	aag Lys	tta Leu	ttt Phe 185	ctc Leu	aac Asn	ctg Leu	gca Ala	acg Thr 190	ctg Leu	ctc Leu	5	76
ccc Pro		195	V 41	Cys	neu	mec	200	Pne	Pne	Leu	Leu	11e 205	Leu	Ser	Leu	6	24
cgg Arg	aga Arg 210	cat His	atc Ile	agg Arg	cga Arg	atg Met 215	cag Gln	ctc Leu	agt Ser	gcc Ala	aca Thr 220	GJA āāā	tgc Cys	aga Arg	gac Asp	6	72
ccc Pro 225	agc Ser	aca Thr	gaa Glu	gcc Ala	cat His 230	gtg Val	aga Arg	gcc Ala	ctg Leu	aaa Lys 235	gct Ala	gtc Val	att Ile	tcc Ser	ttc Phe 240	7:	20
ctt Leu	ctc Leu	ctc Leu	ttt Phe	att Ile 245	gcc Ala	tac Tyr	tat Tyr	ttg Leu	tcc Ser 250	ttt Phe	ctc Leu	att Ile	gcc Ala	acc Thr 255	tcc Ser	7	68
agc Ser	tac Tyr		atg Met 260	cca Pro	gag Glu	ayg Xaa	gaa Glu	tta Leu 265	gct Ala	gtg Val	att Ile	ttt Phe	ggt Gly 270	gag Glu	tcc Ser	8:	16
ata (Ile)		cta Leu 275	atc Ile	tac Tyr	ccc Pro	tca Ser	agt Ser 280	cat His	tca Ser	ttt Phe	atc Ile	cta Leu 285	ata Ile	ctg Leu	ej aaa	86	64
aac a Asn a	aat Asn 290	aaa Lys	tta Leu	aga Arg	cat His	gca Ala 295	tct Ser	cta Leu	aag Lys	gtg Val	att Ile 300	tgg Trp	aaa Lys	gta Val	atg Met	91	12
tct a Ser : 305	att Ile	cta Leu	aaa Lys	gga Gly	aga Arg 310	aaa Lys	ttc Phe	caa Gln	caa Gln	cat His 315	aaa Lys	caa Gln	atc Ile	tga		95	57
<210: <211: <212: <213:	> 3 > P	0 18 RT omo	sapi	ens													
<2203 <2213 <2223 <2233	> m > (isc_ 263) he ':	(2	63)	loca	tion	263	sta	nds	for	Th∽		Me+				
<400>			-	-		~ ~ ~ 1		Jea	-143	TOE	111 T ,	or	Met.				

- Met Ala Asp Lys Val Gln Thr Thr Leu Leu Phe Leu Ala Val Gly Glu 1 5 10 15
- Phe Ser Val Gly Ile Leu Gly Asn Ala Phe Ile Gly Leu Val Asn Cys 20 25 30
- Met Asp Trp Val Lys Lys Arg Lys Ile Ala Ser Ile Asp Leu Ile Leu 35 40 45
- Thr Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Leu Leu 50 55 60
- Asp Cys Phe Ile Leu Val Leu Tyr Pro Asp Val Tyr Ala Thr Gly Lys 70 75 80
- Glu Met Arg Ile Ile Asp Phe Phe Trp Thr Leu Thr Asn His Leu Ser 85 90 95
- Ile Trp Phe Ala Thr Cys Leu Ser Ile Tyr Tyr Phe Phe Lys Ile Gly 100 105 110
- Asn Phe Phe His Pro Leu Phe Leu Trp Met Lys Trp Arg Ile Asp Arg 115 . 120 . 125
- Val Ile Ser Trp Ile Leu Leu Gly Cys Val Val Leu Ser Val Phe Ile 130 135 140
- Ser Leu Pro Ala Thr Glu Asn Leu Asn Ala Asp Phe Arg Phe Cys Val 145 150 155 160
- Lys Ala Lys Arg Lys Thr Asn Leu Thr Trp Ser Cys Arg Val Asn Lys 165 170 175
- Thr Gln His Ala Ser Thr Lys Leu Phe Leu Asn Leu Ala Thr Leu Leu 180 185 190
- Pro Phe Cys Val Cys Leu Met Ser Phe Phe Leu Leu Ile Leu Ser Leu 195 200 205
- Arg Arg His Ile Arg Arg Met Gln Leu Ser Ala Thr Gly Cys Arg Asp 210 215 220
- Pro Ser Thr Glu Ala His Val Arg Ala Leu Lys Ala Val Ile Ser Phe 235 240
- Leu Leu Phe Ile Ala Tyr Tyr Leu Ser Phe Leu Ile Ala Thr Ser

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245 250 255 Ser Tyr Phe Met Pro Glu Xaa Glu Leu Ala Val Ile Phe Gly Glu Ser 260 265 Ile Ala Leu Ile Tyr Pro Ser Ser His Ser Phe Ile Leu Ile Leu Gly Asn Asn Lys Leu Arg His Ala Ser Leu Lys Val Ile Trp Lys Val Met Ser Ile Leu Lys Gly Arg Lys Phe Gln Gln His Lys Gln Ile 310 <210> 11 <211> 930 <212> DNA <213> Homo sapiens <220> <221> CDS <222> (1)..(930) <220> <221> variation <222> (496)..(496) <223> r is a or g <220> <221> variation <222> (549)..(549) <223> r is a or g <220> <221> variation <222> (829)..(829) <223> y is t or c <220> <221> variation <222> (922)..(922) <223> r is a or g <400> 11 atg ttc agt cct gca gat aac atc ttt ata atc cta ata act gga gaa 48 Met Phe Ser Pro Ala Asp Asn Ile Phe Ile Ile Leu Ile Thr Gly Glu ttc ata cta gga ata ttg ggg aat gga tac att gca cta gtc aac tgg 96 Phe Ile Leu Gly Ile Leu Gly Asn Gly Tyr Ile Ala Leu Val Asn Trp att gac tgg att aag aag aaa aag att tcc aca gtt gac tac atc ctt

Ile Asp Trp Ile Lys Lys Lys Ile Ser Thr Val Asp Tyr Ile Leu 40

144

	50					55	,	e Cys	s rei	7 TT(e Se 60	r Va.	l Me	t Va	t gta l Val	
65		_			70		. noi	· FIC	ASI	75	L Ty:	r Thi	r Ly:	s As:	t aaa n Lys 80	
				85				: rrt	90	Phe	∍ Ala	a Asr	1 Туј	Le: 95	a aat 1 Asn	
			100)	,-		, wei	105	Pne	туг	Phe	e Leu	Lys 110	3 Ile)	gcc Ala	336
agt Ser	tcc Ser	tct Ser 115	cat His	cca Pro	ctt Leu	ttt Phe	cto Leu 120	TTD	ctg Leu	aag Lys	tgg Trp	g aaa Lys 125	Ile	gat Asp	atg Met	384
gtg Val	gtg Val 130	cac His	tgg Trp	atc Ile	ctg Leu	ctg Leu 135	gga Gly	tgc Cys	ttt Phe	gcc Ala	att Ile	Ser	ttg Leu	tto Lev	gtc Val	432
agc Ser 145	ctt Leu	ata Ile	gca Ala	gca Ala	ata Ile 150	gta Val	ctg Leu	agt Ser	tgt Cys	gat Asp 155	Tyr	agg Arg	ttt Phe	cat His	gca Ala 160	480
		-		165		*1011	116	IIIT	170	Met	Phe	His	Val	Ser 175		528
		-	180				411T	185	Pne	Asn	Leu	ttt Phe	Ala 190	Ile	Val	576
cca Pro	ttt Phe	att Ile 195	gtg Val	tca Ser	ctg Leu	ata Ile	tca Ser 200	ttt Phe	ttc Phe	ctt Leu	tta Leu	gta Val 205	aga Arg	tct Ser	tta Leu	624
tgg Trp	aga Arg 210	cat His	acc Thr	aag Lys	caa Gln	ata Ile 215	aaa Lys	ctc Leu	tat Tyr	gct Ala	acc Thr 220	ggc Gly	agt Ser	aga Arg	gac Asp	672
ecc Pro 225	agc Ser	aca Thr	gaa Glu	gtt Val	cat His 230	gtg Val	aga Arg	gcc Ala	att Ile	aaa Lys 235	act Thr	atg Met	act Thr	tca Ser	ttt Phe 240	720
atc Ile				245		- ,y	- y -	TIG	250	ser	TTE	Leu	Met	Thr 255	Phe	768
agc : Ser !			260		-10	-1-	בענ	265	мта	vaı	GIU	Phe	Gly 270	Glu	Ile	816
gca (Ala)	gca Ala	att Ile 275	ctc Leu	yac Xaa	ccc Pro	LCu .	ggt Gly 280	cac : His :	tca Ser	ctt Leu	Ile	tta Leu 285	att Ile	gtt Val	tta Leu	864

290 295 Thr Phe Val Arg Met Leu Thr Cys Arg Lys 300 att gcc tgc rtg ata tga Ile Ala Cys Xaa Ile 305 <210> 12 <211> 309 <212> PRT <213> Homo sapiens <220> <221> misc_feature <222> (166)(166) <223> The 'Xaa' at location 166 stands for Gly, or Arg. <220> <221> misc_feature	(01948
<pre>Ile Ala Cys Xaa Ile 305 <210> 12 <211> 309 <212> PRT <213> Homo sapiens <220> <221> misc_feature <222> (166)(166) <223> The 'Xaa' at location 166 stands for Gly, or Arg. <220> <221> misc_feature</pre>	912
<pre><211> 309 <212> PRT <213> Homo sapiens <220> <221> misc_feature <222> (166)(166) <223> The 'Xaa' at location 166 stands for Gly, or Arg. <220> <221> misc_feature</pre>	930
<pre><221> misc_feature <222> (166)(166) <223> The 'Xaa' at location 166 stands for Gly, or Arg. <220> <221> misc_feature</pre>	
<221> misc_feature	
<222> (183)(183) <223> The 'Xaa' at location 183 stands for Leu.	
<pre><220> <221> misc_feature <222> (277)(277) <223> The 'Xaa' at location 277 stands for His, or Tyr.</pre>	
<pre><220> <221> misc_feature <222> (308)(308) <223> The 'Xaa' at location 308 stands for Val, or Met.</pre>	
<400> 12	
Met Phe Ser Pro Ala Asp Asn Ile Phe Ile Ile Leu Ile Thr Gly Glu 1 5 10 15	
Phe Ile Leu Gly Ile Leu Gly Asn Gly Tyr Ile Ala Leu Val Asn Trp 20 25 30	
Ile Asp Trp Ile Lys Lys Lys Ile Ser Thr Val Asp Tyr Ile Leu 35 40 45	
Thr Asn Leu Val Ile Ala Arg Ile Cys Leu Ile Ser Val Met Val Val 50 55 60	
Asn Gly Ile Val Ile Val Leu Asn Pro Asp Val Tyr Thr Lys Asn Lys 70 75 80	

Gln Gln Ile Val Ile Phe Thr Phe Trp Thr Phe Ala Asn Tyr Leu Asn 85 90 95

Met Trp Ile Thr Thr Cys Leu Asn Val Phe Tyr Phe Leu Lys Ile Ala

100 105 110

Ser Ser Ser His Pro Leu Phe Leu Trp Leu Lys Trp Lys Ile Asp Met 115 120 125

Val Val His Trp Ile Leu Leu Gly Cys Phe Ala Ile Ser Leu Leu Val 130 135 140

Ser Leu Ile Ala Ala Ile Val Leu Ser Cys Asp Tyr Arg Phe His Ala 145 150 155 160

Ile Ala Lys His Lys Xaa Asn Ile Thr Glu Met Phe His Val Ser Lys 165 170 175

Ile Pro Tyr Phe Glu Pro Xaa Thr Leu Phe Asn Leu Phe Ala Ile Val

Pro Phe Ile Val Ser Leu Ile Ser Phe Phe Leu Leu Val Arg Ser Leu 195 200 205

Trp Arg His Thr Lys Gln Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp 210 215 220

Pro Ser Thr Glu Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe 225 235 240

Ile Phe Phe Phe Phe Leu Tyr Tyr Ile Ser Ser Ile Leu Met Thr Phe 245 250 255

Ser Tyr Leu Met Thr Lys Tyr Lys Leu Ala Val Glu Phe Gly Glu Ile 260 265 270

Ala Ala Ile Leu Xaa Pro Leu Gly His Ser Leu Ile Leu Ile Val Leu 275 280 285

Asn Asn Lys Leu Arg Gln Thr Phe Val Arg Met Leu Thr Cys Arg Lys 290 295 300

Ile Ala Cys Xaa Ile 305

<210> 13

<211> 939

<212> DNA

<213> Homo sapiens

	21>	CDS (1).	. (93	39)													
<22	?1> ?2>	vari (201 m is	.) ((201)													
<22	21> 22>	vari (450 w is) (450)													
<22	1> 2>	vari (560 y is) (560)													
	1> 2>	vari (867 k is)(867)													
<22	1> 2> ,	vari (880 m is) (880)													
<40 atg Met 1	cca	13 agt Ser	gca Ala	ata Ile 5	gag Glu	gca Ala	ata Ile	tat Tyr	att Ile 10	att Ile	tta Leu	att Ile	gct Ala	ggt Gly 15	gaa Glu	1	48
ttg Leu	acc Thr	ata Ile	ggg Gly 20	att Ile	tgg Trp	gga Gly	aat Asn	gga Gly 25	ttc Phe	att Ile	gta Val	cta Leu	gtt Val 30	aac Asn	tgc Cys		96
att Ile	gac Asp	tgg Trp 35	ctc Leu	aaa Lys	aga Arg	aga Arg	gat Asp 40	att Ile	tcc Ser	ttg Leu	att Ile	gac Asp 45	atc Ile	atc Ile	ctg Leu		144
atc Ile	agc Ser 50	ttg Leu	gcc Ala	atc Ile	tcc Ser	aga Arg 55	atc Ile	tgt Cys	ctg Leu	çtg Leu	tgt Cys 60	gta Val	ata Ile	tca Ser	tta Leu	:	192
gat Asp 65	ggc Gly	ttm Xaa	ttt Phe	atg Met	ctg Leu 70	ctc Leu	ttt Phe	cca Pro	ggt Gly	aca Thr 75	tat Tyr	Gly ggc	aat Asn	agc Ser	gtg Val 80	:	240
cta Leu	gta Val	agc Ser	att Ile	gtg Val 85	aat Asn	gtt Val	gtc Val	tgg Trp	aca Thr 90	ttt Phe	gcc Ala	aat Asn	aat Asn	tca Ser 95	agt Ser	2	288
		ttt Phe	100	per	Суз	пеп	ser	105	Phe	Tyr	Leu	Leu	Lys 110	Ile	Ala	3	336
aat Asn	ata Ile	tcg Ser 115	cac His	cca Pro	ttt Phe	ttc Phe	ttc Phe 120	tgg Trp	ctg Leu	aag Lys	cta Leu	aag Lys 125	atc Ile	aac Asn	aag Lys	3	384

	130					135	. Gry	ser	Fue	. Ten	140	Ser	Leu	lle	att Ile	432
145			-		150		Mec	пр	ıyr	155	Leu	Phe	Lys	Val	agt Ser 160	480
				165		110	пуз	riie	170	Val	Ser		Ile	Pro 175	Gly	528
act Thr		_	180			Jou	11011	185	GTÅ	лаа	Met	Val	Pro 190	Phe	Ile	576
ctt Leu		195				1116	200	пеп	Leu	Pne	Ser	Leu 205	Val	Arg	His	624
acc ;	210					215	TTG	THE	стА	Pne	Arg 220	Asp	Pro	Ser	Thr	672
gag (Glu) 225				9	230	416	туу	нта	vaı	235	Ile	Phe	Leu	Leu	Leu 240	720
ctc a			-,, -	245	110	Val	rne	ьец	250	Met	Thr	Ser	Ser	Ala 255	Leu	768
att d Ile I			260			7 4 1	пец	265	тте	стĀ	Asp	Ile	Val 270	Thr	Val	816
att t		275				UGL	280	тте	ьеи	TTE	Met	Gly 285	Asn	Ser	Lys	864
ttk a Xaa A 2	90			_		295	146.6	neu .	aga Arg	Pne	gtg Val 300	aag Lys	tgt Cys	ttc Phe	ctt Leu	912
aga a Arg A 305	iga a	aga Arg	aag Lys	Pro	ttt Phe 310	gtt Val	cca Pro	tag								939
<210> <211> <212> <213>	31 PF	L2 RT	sapie	ens												
<220> <221> <222> <223>	mi (6	57)	feati (67) Kaa'		Locat	ion	67 .	stanc	ds f	or Iv	211	or Ph				
<220>			•							416	Ju _p ()T EL	ie.			

WO 2005/007891 <221> misc feature <222> (150)..(150)<223> The 'Xaa' at location 150 stands for Glu, or Asp. <220> <221> misc_feature <222> (187)...(187)<223> The 'Xaa' at location 187 stands for Ala, or Val. <220> <221> misc_feature <222> (289)..(289)<223> The 'Xaa' at location 289 stands for Leu, or Phe. <220> <221> misc_feature <222> (294)..(294) <223> The 'Xaa' at location 294 stands for Met, or Leu. <400> 14 Met Pro Ser Ala Ile Glu Ala Ile Tyr Ile Ile Leu Ile Ala Gly Glu Leu Thr Ile Gly Ile Trp Gly Asn Gly Phe Ile Val Leu Val Asn Cys

Ile Asp Trp Leu Lys Arg Arg Asp Ile Ser Leu Ile Asp Ile Ile Leu

Ile Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Ser Leu

Asp Gly Xaa Phe Met Leu Leu Phe Pro Gly Thr Tyr Gly Asn Ser Val

Leu Val Ser Ile Val Asn Val Val Trp Thr Phe Ala Asn Asn Ser Ser 85

Leu Trp Phe Thr Ser Cys Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala 100

Asn Ile Ser His Pro Phe Phe Phe Trp Leu Lys Leu Lys Ile Asn Lys 120

Val Met Leu Ala Ile Leu Leu Gly Ser Phe Leu Ile Ser Leu Ile Ile 135 140

Ser Val Pro Lys Asn Xaa Asp Met Trp Tyr His Leu Phe Lys Val Ser 150 155

His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly 165 170

Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Xaa Met Val Pro Phe Ile 180 180 180

Leu Cys Leu Ile Ser Phe Phe Leu Leu Leu Phe Ser Leu Val Arg His 195 200 205

Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr 210 215 220

Glu Ala His Met Arg Ala Ile Lys Ala Val Ile Ile Phe Leu Leu 240

Leu Ile Val Tyr Tyr Pro Val Phe Leu Val Met Thr Ser Ser Ala Leu 245 250 255

Ile Pro Gln Gly Lys Leu Val Leu Met Ile Gly Asp Ile Val Thr Val 260 265 270

Ile Phe Pro Ser Ser His Ser Phe Ile Leu Ile Met Gly Asn Ser Lys 275 280 285

Xaa Arg Glu Ala Phe Xaa Lys Met Leu Arg Phe Val Lys Cys Phe Leu 290 295 300

Arg Arg Arg Lys Pro Phe Val Pro 305 310

<210> 15

<211> 924

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(924)

<220>

<221> variation

<222> (80)..(80)

<223> r is g or a

<220>

<221> variation

<222> (467)..(467)

<223> y is c or t

<220>

										26/4	17					1 (1/(032004/01948
	<22	21> 22> 23>	(521	atio .)((521)												
	<22	1>	(564	atio)(a c	564)												
1	<22	1> 2>	(627	atic ')(: a o	627)												
	<40 atg Met 1	cta	15 cgt Arg	gta Val	gtg Val 5	gaa Glu	ggc	atc Ile	ttc Phe	att Ile 10	ttt Phe	gtt Val	gta Val	gtt Val	agt Ser 15	gag Glu	48
	tca Ser	gtg Val	ttt Phe	20 Gly ggg	gtt Val	ttg Leu	gj A aaa	aat Asn	gga Gly 25	ttt Phe	att Ile	gga Gly	ctt Leu	gta Val 30	aac Asn	tgc Cys	96
	att Ile	gac Asp	tgt Cys 35	gcc Ala	aag Lys	aat Asn	aag Lys	ttr Xaa 40	tct Ser	acg Thr	att Ile	ggc	ttt Phe 45	att Ile	ctc Leu	acc Thr	144
	Gly	tta Leu 50	gct Ala	att Ile	tca Ser	aga Arg	att Ile 55	ttt Phe	ctg Leu	ata Ile	tgg Trp	ata Ile 60	ata Ile	att Ile	aca Thr	gat Asp	192
	gga Gly 65	ttt Phe	ata Ile	cag Gln	ata Ile	ttc Phe 70	tct Ser	cca Pro	aat Asn	ata Ile	tat Tyr 75	gcc Ala	tcc Ser	ggt Gly	aac Asn	cta Leu 80	240
	att Ile	gaa Glu	tat Tyr	att Ile	agt Ser 85	tac Tyr	ttt Phe	tgg Trp	gta Val	att Ile 90	ggt Gly	aat Asn	caa Gln	tca Ser	agt Ser 95	atg Met	288
	tgg Trp	ttt Phe	gcc Ala	acc Thr 100	agc Ser	ctc Leu	agc Ser	atc Ile	ttc Phe 105	tat Tyr	ttc Phe	ctg Leu	aag Lys	ata Ile 110	gca Ala	aat Asn	336
	ttt Phe	tcc Ser	aac Asn 115	tac Tyr	ata Ile	ttt Phe	ctc Leu	tgg Trp 120	ttg Leu	aag Lys	agc Ser	aga Arg	aca Thr 125	aat Asn	atg Met	gtt Val	384
	ctt Leu	ccc Pro 130	ttc Phe	atg Met	ata Ile	gta Val	ttc Phe 135	tta Leu	ctt Leu	att Ile	tca Ser	tcg Ser 140	tta Leu	ctt Leu	aat Asn	ttt Phe	432
	gca Ala 145	tac Tyr	att Ile	gcg Ala	aag Lys	att Ile 150	ctt Leu	aat Asn	gat Asp	tat Tyr	aaa Lys 155	ayg Xaa	aag Lys	aat Asn	gac Asp	aca Thr 160	480
	gtc Val	tgg Trp	gat Asp	ctc Leu	aac Asn 165	atg Met	tat Tyr	aaa Lys	agt Ser	gaa Glu 170	tac Tyr	ttt Phe	att Ile	ama Xaa	cag Gln 175	att Ile	528
	ttg Leu	cta Leu	aat Asn	ctg Leu	gga Gly	gtc Val	att Ile	ttc Phe	ttc Phe	ttt Phe	aca Thr	ctr Xaa	tcc Ser	cta Leu	att Ile	aca Thr	576

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180	185 190	
tgt att ttt tta atc att tcc ctt Cys Ile Phe Leu Ile Ile Ser Leu 195 200	tgg aga cac aac agg cag atg caa I Trp Arg His Asn Arg Gln Met Gln 205	624
ter aat gtg aca gga ttg aga gad Xaa Asn Val Thr Gly Leu Arg Asp 210 215	c too aac aca gaa got cat gtg aag o Ser Asn Thr Glu Ala His Val Lys . 220	672
gca atg aaa gtt ttg ata tct ttc Ala Met Lys Val Leu Ile Ser Phe 225 230	e atc atc ctc ttt atc ttg tat ttt e Ile Ile Leu Phe Ile Leu Tyr Phe 235 240	720
ata ggc atg gcc ata gaa ata tca Ile Gly Met Ala Ile Glu Ile Ser 245	a tgt ttt act gtg cga gaa aac aaa r Cys Phe Thr Val Arg Glu Asn Lys 250 255	768
ctg ctg ctt atg ttt gga atg aca Leu Leu Leu Met Phe Gly Met Thr 260	a acc aca gcc atc tat ccc tgg ggt r Thr Thr Ala Ile Tyr Pro Trp Gly 265 270	816
cac tca ttt atc tta att cta gga His Ser Phe Ile Leu Ile Leu Gly 275 280	a aac agc aag cta aag caa gcc tct y Asn Ser Lys Leu Lys Gln Ala Ser O 285	864
ttg agg gta ctg cag caa ttg aag Leu Arg Val Leu Gln Gln Leu Lys 290 295	g tgc tgt gag aaa agg aaa aat ctc s Cys Cys Glu Lys Arg Lys Asn Leu 300	912
aga gtc aca tag Arg Val Thr 305		924
<210> 16 <211> 307 <212> PRT <213> Homo sapiens		
<220> <221> misc_feature <222> (40)(40) <223> The 'Xaa' at location 40	O stands for Leu.	
<220> <221> misc_feature <222> (156)(156) <223> The 'Xaa' at location 19	56 stands for Thr, or Met.	
<220> <221> misc_feature <222> (174)(174) <223> The 'Xaa' at location 1	74 stands for Lys, or Thr.	
<pre><220> <221> misc_feature <222> (188)(188) <223> The 'Xaa' at location 18</pre>	88 stands for Leu.	
<220>		

- <221> misc_feature
 <222> (209)..(209)
 <223> The 'Xaa' at location 209 stands for Ser.

<400> 16

- Met Leu Arg Val Val Glu Gly Ile Phe Ile Phe Val Val Val Ser Glu 10
- Ser Val Phe Gly Val Leu Gly Asn Gly Phe Ile Gly Leu Val Asn Cys 20 25
- Ile Asp Cys Ala Lys Asn Lys Xaa Ser Thr Ile Gly Phe Ile Leu Thr 35 40
- Gly Leu Ala Ile Ser Arg Ile Phe Leu Ile Trp Ile Ile Ile Thr Asp 50 55
- Gly Phe Ile Gln Ile Phe Ser Pro Asn Ile Tyr Ala Ser Gly Asn Leu 65 70
- Ile Glu Tyr Ile Ser Tyr Phe Trp Val Ile Gly Asn Gln Ser Ser Met 85
- Trp Phe Ala Thr Ser Leu Ser Ile Phe Tyr Phe Leu Lys Ile Ala Asn 100
- Phe Ser Asn Tyr Ile Phe Leu Trp Leu Lys Ser Arg Thr Asn Met Val 115
- Leu Pro Phe Met Ile Val Phe Leu Leu Ile Ser Ser Leu Leu Asn Phe 130 135
- Ala Tyr Ile Ala Lys Ile Leu Asn Asp Tyr Lys Xaa Lys Asn Asp Thr 145 150
- Val Trp Asp Leu Asn Met Tyr Lys Ser Glu Tyr Phe Ile Xaa Gln Ile 165 170
- Leu Leu Asn Leu Gly Val Ile Phe Phe Phe Thr Xaa Ser Leu Ile Thr 180 185
- Cys Ile Phe Leu Ile Ile Ser Leu Trp Arg His Asn Arg Gln Met Gln 195 200
- Xaa Asn Val Thr Gly Leu Arg Asp Ser Asn Thr Glu Ala His Val Lys 210 215

Ala 225	Met	Lys	Val	Leu	Ile 230	Ser	Phe	Ile	Ile	Leu 235	Phe	Ile	Leu	Tyr	Phe 240	
Ile	Gly	Met	Ala	Ile 245	Glu	Ile	Ser	Cys	Phe 250	Thr	Val	Arg	Glu	Asn 255	Lys	
Leu	Leu	Leu	Met 260	Phe	Gly	Met	Thr	Thr 265	Thr	Ala	Ile	Tyr	Pro 270	Trp	Gly	
His	Ser	Phe 275	Ile	Leu	Ile	Leu	Gly 280	Asn	Ser	Lys	Leu	Lys 285	Gln	Ala	Ser	
Leu	Arg 290	Val	Leu	Gln	Gln	Leu 295	Lys	Cys	Cys	Glu	Lys 300	Arg	Lys	Asn	Leu	
Arg 305	Val	Thr														
<210 <211 <212 <213	.> ! !> !	17 912 ONA Homo	sapi	iens												
<220 <221 <222	.> (CDS (1)	. (912	2)												
<220 <221 <222 <223	> ·	varia (776) r is	(7	776)												
<400 atg Met 1	gaa	l7 agt Ser	gcc Ala	ctg Leu 5	ccg Pro	agt Ser	atc Ile	ttc Phe	act Thr 10	ctt Leu	gta Val	ata Ile	att Ile	gca Ala 15	gaa Glu	48
ttc Phe	ata Ile	att Ile	ggg Gly 20	aat Asn	ttg Leu	agc Ser	aat Asn	gga Gly 25	ttt Phe	ata Ile	gta Val	ctg Leu	atc Ile 30	aac Asn	tgc Cys	96
att Ile	gac Asp	tgg Trp 35	gtc Val	agt Ser	aaa Lys	aga Arg	gag Glu 40	ctg Leu	tcc Ser	tca Ser	gtc Val	gat Asp 45	aaa Lys	ctc Leu	ctc Leu	144
att Ile	atc Ile 50	ttg Leu	gca Ala	atc Ile	tcc Ser	aga Arg 55	att Ile	Gly ggg	ctg Leu	atc Ile	tgg Trp 60	gaa Glu	ata Ile	tta Leu	gta Val	192
agt Ser 65	tgg Trp	ttt Phe	tta Leu	gct Ala	ctg Leu 70	cat His	tat Tyr	cta Leu	gcc Ala	ata Ile 75	ttt Phe	gtg Val	tct Ser	gga Gly	aca Thr 80	240

										-, -	•						
					85			. 061	. IT	90	∍ va.	L Se:	r Ası	ı His	95 Phe	c aat e Asn	288
				100)			Del	105	Fne	з туг	: Le	ı Lev	1 Lys 110	3 Il∈)	a gcg e Ala	336
			115	5			0	120	, 131	тег	гтўз	Trp	125	val	. Asn	aaa Lys	384
	gtg Val	att Ile 130	cto Leu	atçı Met	g ata : Ile	ctg Leu	cta Leu 135	OTA	acc Thr	ttg Leu	gtc Val	tto Phe	e Leu	ttt Phe	tta Leu	aat Asn	432
	ctg Leu 145	ata Ile	caa Gln	ata Ile	aac Asn	atg Met 150	cat His	ata Ile	aaa Lys	gac Asp	tgg Trp 155	Leu	gac Asp	cga Arg	tat Tyr	gaa Glu 160	480
	aga Arg	aac Asn	aca Thr	act Thr	tgg Trp 165	aat Asn	ttc Phe	agt Ser	atg Met	agt Ser 170	gac Asp	ttt Phe	gaa Glu	aca Thr	ttt Phe 175		528
	gtg Val	tcg Ser	gtc Val	aaa Lys 180	ttc Phe	act Thr	atg Met	act Thr	atg Met 185	ttc Phe	agt Ser	cta Leu	aca Thr	cca Pro 190	ttt Phe	act Thr	576
	gtg Val	gcc Ala	ttc Phe 195	atc Ile	tct Ser	ttt Phe	ctc Leu	ctg Leu 200	tta Leu	att Ile	ttc Phe	tcc Ser	ctg Leu 205	cag Gln	aaa Lys	cat His	624
-	. ctc Leu	cag Gln 210	aaa Lys	atg Met	caa Gln	ctc Leu	aat Asn 215	tac Tyr	aaa Lys	gga Gly	cac His	aga Arg 220	gac Asp	ccc Pro	agg Arg	acc Thr	672
	aag Lys 225	gtc Val	cat His	aca Thr	aat Asn	gcc Ala 230	ttg Leu	aaa Lys	att Ile	gtg Val	atc Ile 235	tca Ser	ttc Phe	ctt Leu	tta Leu	ttc Phe 240	720
	tat Tyr	gct Ala	agt Ser	ttc Phe	ttt Phe 245	cta Leu	tgt Cys	gtt Val	neu	ata Ile 250	tca Ser	tgg Trp	att Ile	tct Ser	gag Glu 255		768
	tat Tyr	cag Gln	arc Xaa	aca Thr 260	gtg Val	atc Ile	tac Tyr	atg Met	ctt Leu 265	tgt Cys	gag Glu	acg Thr	att Ile	gga Gly 270	gtc Val	ttc Phe	816
	tct Ser	cct Pro	tca Ser 275	agc Ser	cac His	tcc Ser	~ 110 .	ctt Leu 280	ctg Leu	att Ile	cta Leu	GTÅ	aac Asn 285	gct Ala	aag Lys	tta Leu	864
		cag Gln 290	gcc Ala	ttt Phe	ctt Leu I		gtg (Val 2 295	gca Ala	gct Ala	aag Lys	var	tgg Trp 300	gct Ala	aaa Lys	cga Arg	tga	912

<210> 18 <211> 303 <212> PRT

<213> Homo sapiens

<220>

<221> misc_feature

<222> (259)..(259)

<223> The 'Xaa' at location 259 stands for Ser, or Asn.

<400> 18

Met Glu Ser Ala Leu Pro Ser Ile Phe Thr Leu Val Ile Ile Ala Glu 1 5 10 15

Phe Ile Ile Gly Asn Leu Ser Asn Gly Phe Ile Val Leu Ile Asn Cys 20 25 30

Ile Asp Trp Val Ser Lys Arg Glu Leu Ser Ser Val Asp Lys Leu Leu 35 40 45

Ile Ile Leu Ala Ile Ser Arg Ile Gly Leu Ile Trp Glu Ile Leu Val 50 55 60

Ser Trp Phe Leu Ala Leu His Tyr Leu Ala Ile Phe Val Ser Gly Thr 70 75 80

Gly Leu Arg Ile Met Ile Phe Ser Trp Ile Val Ser Asn His Phe Asn 85 90 95

Leu Trp Leu Ala Thr Ile Phe Ser Ile Phe Tyr Leu Leu Lys Ile Ala 100 105 110

Ser Phe Ser Ser Pro Ala Phe Leu Tyr Leu Lys Trp Arg Val Asn Lys 115 120 125

Val Ile Leu Met Ile Leu Leu Gly Thr Leu Val Phe Leu Phe Leu Asn 130 135 140

Leu Ile Gln Ile Asn Met His Ile Lys Asp Trp Leu Asp Arg Tyr Glu 145 150 155 160

Arg Asn Thr Thr Trp Asn Phe Ser Met Ser Asp Phe Glu Thr Phe Ser 165 170 175

Val Ser Val Lys Phe Thr Met Thr Met Phe Ser Leu Thr Pro Phe Thr 180 185 190

Val Ala Phe Ile Ser Phe Leu Leu Leu Ile Phe Ser Leu Gln Lys His 195 200 205

Leu Gln Lys Met Gln Leu Asn Tyr Lys Gly His Arg Asp Pro Arg Thr

21.0		
210	215	220

Lys Val His Thr Asn Ala Leu Lys Ile Val Ile Ser Phe Leu Leu Phe 235 Tyr Ala Ser Phe Phe Leu Cys Val Leu Ile Ser Trp Ile Ser Glu Leu Tyr Gln Xaa Thr Val Ile Tyr Met Leu Cys Glu Thr Ile Gly Val Phe Ser Pro Ser Ser His Ser Phe Leu Leu Ile Leu Gly Asn Ala Lys Leu 280 Arg Gln Ala Phe Leu Leu Val Ala Ala Lys Val Trp Ala Lys Arg <210> 19 <211> 954 <212> DNA <213> Homo sapiens <220> <221> CDS <222> (1)..(954) <220> <221> variation <222> (256)..(256) <223> r is a or g <400> 19 atg ggt ggt gtc ata aag agc ata ttt aca ttc gtt tta att gtg gaa Met Gly Gly Val Ile Lys Ser Ile Phe Thr Phe Val Leu Ile Val Glu 48 ttt ata att gga aat tta gga aat agt ttc ata gca ctg gtg aac tgt Phe Ile Ile Gly Asn Leu Gly Asn Ser Phe Ile Ala Leu Val Asn Cys 96 att gac tgg gtc aag gga aga aag atc tct tcg gtt gat cgg atc ctc Ile Asp Trp Val Lys Gly Arg Lys Ile Ser Ser Val Asp Arg Ile Leu 144 act gct ttg gca atc tct cga att agc ctg gtt tgg tta ata ttc gga Thr Ala Leu Ala Ile Ser Arg Ile Ser Leu Val Trp Leu Ile Phe Gly 192 55 age tgg tgt gtg tet gtg ttt tte eea get tta ttt gee act gaa aaa Ser Trp Cys Val Ser Val Phe Phe Pro Ala Leu Phe Ala Thr Glu Lys 240 70 atg ttc aga atg ctt rct aat atc tgg aca gtg atc aat cat ttt agt Met Phe Arg Met Leu Xaa Asn Ile Trp Thr Val Ile Asn His Phe Ser

288

** O 2005/00/891		
		PCT/US2004/019489
	33/4/17	- 0 1/ 002/04/01/409

				85					90					95			
	•		100)	. Сту	пец	, ст	105	Pne	э Туг	: Phe	e Leu	Lys 110	: Ile	a gcc e Ala	3	336
aat Asn	ttt Phe	tct Ser 115		tct Ser	att Ile	ttt Phe	Leu 120	TAT	cta Leu	aag Lys	g tgg Trp	g agr Arg 125	Val	aaa Lys	a aag 5 Lys	3	384
	130		, 44	200	. Dea	135	vaı	THE	ser	. val	. Phe 140	: Leu	Phe	Lev	aat Asn	4	132
145				11011	150	1172	116	ASI	Ата	155	Ile	Asn	Gly	Туг	aga Arg 160	4	180
aga Arg	aac Asn	aag Lys	act Thr	tgc Cys 165	Det	tct Ser	gat Asp	tca Ser	agt Ser 170	Asn	ttt Phe	aca Thr	cga Arg	ttt Phe 175	tcc Ser	5	28
agt Ser	ctt Leu	att Ile	gta Val 180	tta Leu	acc Thr	agc Ser	act Thr	gtg Val 185	ttc Phe	att Ile	ttc Phe	ata Ile	ccc Pro 190	ttt Phe	act Thr	5	76
ttg Leu	tcc Ser	ctg Leu 195	gca Ala	atg Met	ttt Phe	ctt Leu	ctc Leu 200	ctc Leu	atc Ile	ttc Phe	tcc Ser	atg Met 205	tgg Trp	aaa Lys	cat His	6	24
cgc Arg	aag Lys 210	aag Lys	atg Met	cag Gln	cac His	act Thr 215	gtc Val	aaa Lys	ata Ile	tcc Ser	gga Gly 220	gac Asp	gcc Ala	agc Ser	acc Thr	6	72
aaa Lys 225	gcc Ala	cac His	aga Arg	gga Gly	gtt Val 230	aaa Lys	agt Ser	gtg Val	atc Ile	act Thr 235	ttc Phe	ttc Phe	cta Leu	ctc Leu	tat Tyr 240	7:	20
gcc Ala	att Ile	ttc Phe	tct Ser	ctg Leu 245	tct Ser	ttt Phe	ttc Phe	ata Ile	tca Ser 250	gtt Val	tgg Trp	acc Thr	tct Ser	gaa Glu 255	agg Arg	76	68
ttg Leu	gag Glu	gaa Glu	aat Asn 260	cta Leu	att Ile	att Ile	ctt Leu	tcc Ser 265	cag Gln	gtg Val	atg Met	gga Gly	atg Met 270	gct Ala	tat Tyr	81	16
cct Pro	tca Ser	tgt Cys 275	cac His	tca Ser	tgt Cys	gtt Val	ctg Leu 280	att Ile	ctt Leu	gga Gly	aac Asn	aag Lys 285	aag Lys	ctg Leu	aga Arg	86	54
cag Gln	gcc Ala 290	tct Ser	ctg Leu	tca Ser	gtg Val	cta Leu 295	ctg Leu	tgg Trp	ctg Leu	agg Arg	tac Tyr 300	atg Met	ttc Phe	aaa Lys	gat Asp	91	12
ggg Gly 305	gag Glu	ccc Pro	tca Ser	ggt Gly	cac His 310	aaa Lys	gaa Glu	ttt Phe	aga Arg	gaa Glu 315	tca Ser	tct Ser	tga			95	54

<210> 20 <211> 317

<212> PRT

<213> Homo sapiens

<220>

<221> misc_feature

<222> (86)..(86)

<223> The 'Xaa' at location 86 stands for Ala, or Thr.

<400> 20

Met Gly Gly Val Ile Lys Ser Ile Phe Thr Phe Val Leu Ile Val Glu 1 5 10 15

Phe Ile Ile Gly Asn Leu Gly Asn Ser Phe Ile Ala Leu Val Asn Cys 20 25 30

Ile Asp Trp Val Lys Gly Arg Lys Ile Ser Ser Val Asp Arg Ile Leu 35 40 45

Thr Ala Leu Ala Ile Ser Arg Ile Ser Leu Val Trp Leu Ile Phe Gly 50 55 60

Ser Trp Cys Val Ser Val Phe Phe Pro Ala Leu Phe Ala Thr Glu Lys 70 75 80

Met Phe Arg Met Leu Xaa Asn Ile Trp Thr Val Ile Asn His Phe Ser 85 90 95

Val Trp Leu Ala Thr Gly Leu Gly Thr Phe Tyr Phe Leu Lys Ile Ala 100 105 110

Asn Phe Ser Asn Ser Ile Phe Leu Tyr Leu Lys Trp Arg Val Lys Lys 115 120 125

Val Val Leu Val Leu Leu Leu Val Thr Ser Val Phe Leu Phe Leu Asn 130 135 140

Ile Ala Leu Ile Asn Ile His Ile Asn Ala Ser Ile Asn Gly Tyr Arg 145 150 155 160

Arg Asn Lys Thr Cys Ser Ser Asp Ser Ser Asn Phe Thr Arg Phe Ser 165

Ser Leu Ile Val Leu Thr Ser Thr Val Phe Ile Phe Ile Pro Phe Thr 180 185 190

Leu Ser Leu Ala Met Phe Leu Leu Leu Ile Phe Ser Met Trp Lys His 195 200 205

Arg Lys Lys Met Gln His Thr Val Lys Ile Ser Gly Asp Ala Ser Thr 210 215 220

Lys Ala His Arg Gly Val Lys Ser Val Ile Thr Phe Phe Leu Leu Tyr 230 235 240

Ala Ile Phe Ser Leu Ser Phe Phe, Ile Ser Val Trp Thr Ser Glu Arg 245 250 255

Leu Glu Glu Asn Leu Ile Ile Leu Ser Gln Val Met Gly Met Ala Tyr 260 265 270

Pro Ser Cys His Ser Cys Val Leu Ile Leu Gly Asn Lys Lys Leu Arg 275 280 285

Gln Ala Ser Leu Ser Val Leu Leu Trp Leu Arg Tyr Met Phe Lys Asp 290 295 300

Gly Glu Pro Ser Gly His Lys Glu Phe Arg Glu Ser Ser 305 310 315

<210> 21

<211> 876

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(876)

<220>

<221> variation

<222> (300)..(300)

<223> y is t or c

<220>

<221> variation

<222> (301)..(301)

<223> r is a or g

<220>

<221> variation

<222> (462)..(462)

<223> y is t or c

<220>

<221> variation

<222> (516)..(516)

<223> k is g or t

<220>

<221> variation

<222> (665)(665) <223> r is a or g	
<220> <221> variation <222> (846)(846) <223> r is a or g	
<pre><400> 21 atg ata ccc atc caa ctc act gtc ttc ttc atg atc atc tat gtg c Met Ile Pro Ile Gln Leu Thr Val Phe Phe Met Ile Ile Tyr Val I</pre>	eu
gag tcc ttg aca att att gtg cag agc agc cta att gtt gca gtg c Glu Ser Leu Thr Ile Ile Val Gln Ser Ser Leu Ile Val Ala Val L 20 25 30	eu
ggc aga gaa tgg ctg caa gtc aga agg ctg atg cct gtg gac atg a Gly Arg Glu Trp Leu Gln Val Arg Arg Leu Met Pro Val Asp Met I 35 40 45	le
ctc atc agc ctg ggc atc tct cgc ttc tgt cta cag tgg gca tca at Leu Ile Ser Leu Gly Ile Ser Arg Phe Cys Leu Gln Trp Ala Ser Me 50 55	et
ctg aac aat ttt tgc tcc tat ttt aat ttg aat tat gta ctt tgc aa Leu Asn Asn Phe Cys Ser Tyr Phe Asn Leu Asn Tyr Val Leu Cys As 75	sn N
tta aca atc acc tgg gaa ttt ttt aat atc ctt aca ttc tgg tta aa Leu Thr Ile Thr Trp Glu Phe Phe Asn Ile Leu Thr Phe Trp Leu As 85	nc 288
agc ttg ctt acy rts ttc tac tgc atc aag gtc tct tct ttc acc ca Ser Leu Leu Xaa Xaa Phe Tyr Cys Ile Lys Val Ser Ser Phe Thr Hi 100 105 110	s
cac atc ttt ctc tgg ctg agg tgg aga att ttg agg ttg ttt ccc tgg His Ile Phe Leu Trp Leu Arg Trp Arg Ile Leu Arg Leu Phe Pro Trp 115 120 125	Þ
ata tta ctg ggt tct ctg atg att act tgt gta aca atc atc cct tca Ile Leu Leu Gly Ser Leu Met Ile Thr Cys Val Thr Ile Ile Pro Ser 130 135	c
gct att ggg aat tac att caa att cag yta ctc acc atg gag cat cta Ala Ile Gly Asn Tyr Ile Gln Ile Gln Xaa Leu Thr Met Glu His Leu 145 150 155	1
CCa aga aac agc act gta act gac aaa ctt gaa aak ttt cat cag tat Pro Arg Asn Ser Thr Val Thr Asp Lys Leu Glu Xaa Phe His Gln Tyr 165 170	528
Cag ttc cag gct cat aca gtt gca ttg gtt att cct ttc atc ctg ttc Gln Phe Gln Ala His Thr Val Ala Leu Val Ile Pro Phe Ile Leu Phe 180	576
ctg gcc tcc acc atc ttt ctc atg gca tca ctg acc aag cag ata caa Leu Ala Ser Thr Ile Phe Leu Met Ala Ser Leu Thr Lys Gln Ile Gln 195 200 205	624

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	His H	at agc is Ser 10	act Thr	ggt Gly	cac His	tgc Cys 215	aat Asn	cca Pro	agc Ser	atg Met	aaa Lys 220	gcg Ala	crc Xaa	ttc Phe	act Thr		672
	gcc c Ala Lo 225	g agg eu Arg	tcc Ser	ctt Leu	gcc Ala 230	gtc Val	tta Leu	ttt Phe	att Ile	gtg Val 235	ttt Phe	acc Thr	tct Ser	tac Tyr	ttt Phe 240		720
	cta a Leu T	cc ata nr Ile	ctc Leu	atc Ile 245	acc Thr	att Ile	ata Ile	ggt Gly	act Thr 250	cta Leu	ttt Phe	gat Asp	aag Lys	aga Arg 255	tgt Cys		768
	tgg t	ta tgg eu Trp	gtc Val 260	tgg Trp	gaa Glu	gct Ala	ttt Phe	gtc Val 265	tat Tyr	gct Ala	ttc Phe	atc Ile	tta Leu 270	atg Met	cat His		816
	tcc ac Ser Ti	et tca nr Ser 275	Leu	atg Met	ctg Leu	agc Ser	agc Ser 280	cct Pro	acr Xaa	ttg Leu	aaa Lys	agg Arg 285	att Ile	cta Leu	aag Lys		864
	Gly L	ag tgc ys Cys 90															876
	<210><211><212><213>	291 PRT	sap:	iens													
	<220> <221> <222> <223>	(100	_feat)(: 'Xaa	100)	loca	ation	n 10() sta	ands	for	Thr.	•					
	<220> <221> <222> <223>	(101		101)	loca	ation	n 10:	l sta	ands	for	Val,	, Met	E, OI	c Ile	e.		
	<220> <221> <222> <223>	(154	_feat)(: 'Xaa	154)	loca	ation	n 154	4 sta	ands	for	Leu	•					
	<220> <221> <222> <223>	(172		172)	loca	ation	n 172	2 sta	ands	for	Lys,	, or	Asn	•			
	<220> <221> <222> <223>	(222		222)	loca	ation	n 222	2 sta	ands	for	Arg,	, or	His	•			
	<220> <221> <222> <223>	(282	_feat)(: 'Xaa	282)	loca	ation	n 282	2 sta	ands	for	Thr.						
	<400>	22															•

Met 1	Ile	Pro) Ile	Glr 5	ı Lev	ı Thr	: Val	Phe	Phe	e Met	: Ile	e Ile	э Туг	Va]	Leu
Glu	Ser	Leu	Thr 20	· Ile	: Ile	· Val	Gln	Ser 25	Ser	Leu	ı Ile	e Val	. Ala 30	Val	. Leu
Gly	Arg	Glu 35	Trp	Leu	Gln	Val	Arg 40	Arg	Leu	Met	Pro	Val 45	Asp	Met	Ile
Leu	Ile 50	Ser	Leu	Gly	' Ile	Ser 55	Arg	Phe	Cys	Leu	Gln 60	Trp	Ala	Ser	Met
Leu 65	Asn	Asn	Phe	Cys	Ser 70	Tyr	Phe	Asn	Leu	Asn 75	Tyr	Val	Leu	Cys	Asn 80
Leu	Thr	Ile	Thr	Trp 85	Glu	Phe	Phe	Asn	Ile 90	Leu	Thr	Phe	Trp	Leu 95	Asn
Ser	Leu	Leu	Xaa 100	Xaa	Phe	Tyr	Cys	Ile 105	Lys	Val	Ser	Ser	Phe 110	Thr	His
His	Ile	Phe 115	Leu	Trp	Leu	Arg	Trp 120	Arg	Ile	Leu	Arg	Leu 125	Phe	Pro	Trp
Ile	Leu 130	Leu	Gly	Ser	Leu	Met 135	Ile	Thr	Cys	Val	Thr 140	Ile	Ile	Pro	Ser
Ala 145	Ile	Gly	Asn	Tyr	Ile 150	Gln	Ile	Gln	Xaa	Leu 155	Thr	Met	Glu	His	Leu 160
Pro	Arg	Asn	Ser	Thr 165	Val	Thr	Asp	Lys	Leu 170	Glu	Xaa	Phe	His	Gln 175	Tyr
Gln	Phe	Gln	Ala 180	His	Thr	Val	Ala	Leu 185	Val	Ile	Pro	Phe	Ile 190	Leu	Phe
Leu	Ala	Ser 195	Thr	Ile	Phe	Leu	Met 200	Ala	Ser	Leu	Thr	Lys 205	Gln	Ile	Gln
His	His 210	Ser	Thr	Gly	His	Cys 215	Asn	Pro	Ser	Met	Lys 220	Ala	Xaa	Phe	Thr
Ala : 225	Leu .	Arg	Ser	Leu	Ala 230	Val	Leu	Phe	Ile	Val 235	Phe	Thr	Ser	Tyr	Phe 240

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Leu Thr Ile Leu Ile Thr Ile Ile Gly Thr Leu Phe Asp Lys Arg Cys 245 Trp Leu Trp Val Trp Glu Ala Phe Val Tyr Ala Phe Ile Leu Met His 265 Ser Thr Ser Leu Met Leu Ser Ser Pro Xaa Leu Lys Arg Ile Leu Lys Gly Lys Cys 290 <210> 23 <211> 1002 <212> DNA <213> Homo sapiens <220> <221> CDS <222> (1)..(1002) <220> <221> variation <222> (145)..(145) <223> s is c or g <220> <221> variation <222> (239)..(239) <223> r is a or g <220> <221> variation <222> (785)..(785) <223> y is t or c <220> <221> variation <222> (820)..(820) <223> y is t or c <220> <221> variation <222> (886)..(886) <223> r is a or g <400> 23 atg ttg act cta act cgc atc cgc act gtg tcc tat gaa gtc agg agt 48 Met Leu Thr Leu Thr Arg Ile Arg Thr Val Ser Tyr Glu Val Arg Ser aca ttt ctg ttc att tca gtc ctg gag ttt gca gtg ggg ttt ctg acc 96 Thr Phe Leu Phe Ile Ser Val Leu Glu Phe Ala Val Gly Phe Leu Thr 20 25 30

aat gcc ttc gtt ttc ttg gtg aat ttt tgg gat gta gtg aag agg cag

Asn	Ala	Phe 35	Val	Phe	Leu	Val	Asn 40	Phe	Trp	Asp	Val	Val 45	Lys	Arg	Gln		
sca Xaa	ctg Leu 50	agc Ser	aac Asn	agt Ser	gat Asp	tgt Cys 55	gtg Val	ctg Leu	ctg Leu	tgt Cys	ctc Leu 60	agc Ser	atc Ile	agc Ser	cgg Arg		192
ctt Leu 65	ttc Phe	ctg Leu	cat His	gga Gly	ctg Leu 70	ctg Leu	ttc Phe	ctg Leu	agt Ser	gct Ala 75	atc Ile	cag Gln	ctt Leu	acc Thr	crc Xaa 80		240
ttc Phe	cag Gln	aag Lys	ttg Leu	agt Ser 85	gaa Glu	cca Pro	ctg Leu	aac Asn	cac His 90	agc Ser	tac Tyr	caa Gln	gcc Ala	atc Ile 95	atc Ile		288
atg Met	cta Leu	tgg Trp	atg Met 100	att Ile	gca Ala	aac Asn	caa Gln	gcc Ala 105	aac Asn	ctc Leu	tgg Trp	ctt Leu	gct Ala 110	gcc Ala	tgc Cys		336
ctc Leu	agc Ser	ctg Leu 115	ctt Leu	tac Tyr	tgc Cys	tcc Ser	aag Lys 120	ctc Leu	atc Ile	cgt Arg	ttc Phe	tct Ser 125	cac His	acc Thr	ttc Phe		384
ctg Leu	atc Ile 130	tgc Cys	ttg Leu	gca Ala	agc Ser	tgg Trp 135	gtc Val	tcc Ser	agg Arg	aag Lys	atc Ile 140	tcc Ser	cag Gln	atg Met	ctc Leu		432
ctg Leu 145	ggt Gly	att Ile	att Ile	ctt Leu	tgc Cys 150	tcc Ser	tgc Cys	atc Ile	tgc Cys	act Thr 155	gtc Val	ctc Leu	tgt Cys	gtt Val	tgg Trp 160		480
tgc Cys	ttt Phe	ttt Phe	agc Ser	aga Arg 165	cct Pro	cac His	ttc Phe	aca Thr	gtc Val 170	aca Thr	act Thr	gtg Val	cta Leu	ttc Phe 175	atg Met		528
	21011	aat Asn	180	Arg	цец	Asn	Trp	185	Asn	Lys	Asp	Leu	Asn 190	Leu	Phe		576
tat Tyr	tcc Ser	ttt Phe 195	ctc Leu	ttc Phe	tgc Cys	tat Tyr	ctg Leu 200	tgg Trp	tct Ser	gtg Val	cct Pro	cct Pro 205	ttc Phe	cta Leu	ttg Leu		624
ttt Phe	ctg Leu 210	gtt Val	tct Ser	tct Ser	GJÀ aaa	atg Met 215	ctg Leu	act Thr	gtc Val	tcc Ser	ctg Leu 220	gga Gly	agg Arg	cac His	atg Met		672
agg Arg 225	aca Thr	atg Met	aag Lys	gtc Val	tat Tyr 230	acc Thr	aga Arg	aac Asn	tct Ser	cgt Arg 235	gac Asp	ccc Pro	agc Ser	ctg Leu	gag Glu 240		720
gcc Ala	cac His	att Ile	aaa Lys	gcc Ala 245	ctc Leu	aag Lys	tct Ser	ctt Leu	gtc Val 250	tcc Ser	ttt Phe	ttc Phe	tgc Cys	ttc Phe 255	ttt Phe		768
gtg Val	ata Ile	tca Ser	tcc Ser 260	tgt Cys	gyt Xaa	gcc Ala	Pne	atc Ile 265	tct Ser	gtg Val	ccc Pro	cta Leu	ctg Leu 270	att Ile	ctg Leu		816
tgg Trp	ygc Xaa	gac Asp	aaa Lys	ata Ile	ggg Gly	gtg Val	atg Met	gtt Val	tgt Cys	gtt Val	GJÅ aaa	ata Ile	atg Met	gca Ala	gct Ala	;	864

275 280 285 tgt ccc tct ggg cat gca gcc rtc ctg atc tca ggc aat gcc aag ttg Cys Pro Ser Gly His Ala Ala Xaa Leu Ile Ser Gly Asn Ala Lys Leu 912 agg aga gct gtg atg acc att ctg ctc tgg gct cag agc agc ctg aag Arg Arg Ala Val Met Thr Ile Leu Leu Trp Ala Gln Ser Ser Leu Lys 960 315 320 gta aga gcc gac cac aag gca gat tcc cgg aca ctg tgc tga Val Arg Ala Asp His Lys Ala Asp Ser Arg Thr Leu Cys 1002 325 330 <210> 24 <211> 333 <212> PRT <213> Homo sapiens <220> <221> misc_feature <222> (49)..(49)<223> The 'Xaa' at location 49 stands for Ala, or Pro. <220> <221> misc_feature <222> (80)..(80) <223> The 'Xaa' at location 80 stands for Arg, or His. <220> <221> misc_feature <222> (262)..(262) The 'Xaa' at location 262 stands for Ala, or Val. <223> <220> <221> misc_feature <222> (274)...(274)<223> The 'Xaa' at location 274 stands for Arg, or Cys. <220> <221> misc_feature <222> (296)...(296)The 'Xaa' at location 296 stands for Val, or Ile. <400> 24 Met Leu Thr Leu Thr Arg Ile Arg Thr Val Ser Tyr Glu Val Arg Ser 10 Thr Phe Leu Phe Ile Ser Val Leu Glu Phe Ala Val Gly Phe Leu Thr 25 Asn Ala Phe Val Phe Leu Val Asn Phe Trp Asp Val Val Lys Arg Gln

Xaa Leu Ser Asn Ser Asp Cys Val Leu Leu Cys Leu Ser Ile Ser Arg

Leu 65	ı Ph∈	e Lei	ı His	з Gly	/ Let 70	ı Leı	ı Phe	e Lei	ı Seı	75 Ala	ı Ile	e Glı	n Le	u Th:	r Xaa 80
Phe	Gln	Lys	3 Leu	Ser 85	Glu	Pro) Lev	Asn	His	s Ser	туг	Glr	n Ala	a Ile 95	⊇ Ile
Met	Leu	Trp	Met 100	: Ile	: Ala	Asr	ı Gln	Ala 105	Asn	Leu	Trp	Let	1 Ala		a Cys
Leu	Ser	Leu 115	Leu	Tyr	Cys	Ser	Lys 120	Leu	Ile	Arg	Phe	Ser 125	His	5 Thr	Phe
Leu	Ile 130	Cys	Leu	Ala	Ser	Trp 135	Val	Ser	Arg	Lys	Ile 140	Ser	Glr	n Met	Leu
Leu 145	Gly	Ile	Ile	Leu	Cys 150	Ser	Cys	Ile	Cys	Thr 155	Val	Leu	Cys	: Val	Trp 160
Cys	Phe	Phe	Ser	Arg 165	Pro	His	Phe	Thr	Val 170	Thr	Thr	Val	Leu	Phe 175	
Asn	Asn	Asn	Thr 180	Arg	Leu	Asn	Trp	Gln 185	Asn	Lys	Asp	Leu	Asn 190	Leu	Phe
Tyr	Ser	Phe 195	Leu	Phe	Cys	Tyr	Leu 200	Trp	Ser	Val	Pro	Pro 205	Phe	Leu	Leu
Phe	Leu 210	Val	Ser	Ser	Gly	Met 215	Leu	Thr	Val	Ser	Leu 220	Gly	Arg	His	Met
Arg 225	Thr	Met	Lys	Val	Tyr 230	Thr	Arg	Asn	Ser	Arg 235	Asp	Pro	Ser	Leu	Glu 240
Ala	His	Ile	Lys	Ala 245	Leu	Lys	Ser	Leu	Val 250	Ser	Phe	Phe	Суз	Phe 255	Phe
Val	Ile	Ser	Ser 260	Cys	Xaa	Ala	Phe	Ile 265	Ser	Val	Pro	Leu	Leu 270	Ile	Leu
Trp :	Xaa	Asp 275	Lys	Ile	Gly	Val	Met 280	Val	Суз	Val	Gly	Ile 285	Met	Ala	Ala
Cys :	Pro 290	Ser	Gly	His	Ala	Ala 295	Xaa	Leu	Ile	Ser	Gly 300	Asn	Ala	Lys	Leu

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Arg Arg Ala Val Met Thr Ile Leu Leu Trp Ala Gln Ser Ser Leu Lys 305 310 315 320	
Val Arg Ala Asp His Lys Ala Asp Ser Arg Thr Leu Cys 325 330	
<210> 25 <211> 1014 <212> DNA <213> Homo sapiens	
<220> <221> CDS <222> (1)(1014)	
<220> <221> variation <222> (578)(578) <223> y is t or c	
<220> <221> variation <222> (589)(589) <223> r is a or g	
<pre><400> 25 atg cta ggg aga tgt ttt cct cca gac acc aaa gag aag caa cag ctc Met Leu Gly Arg Cys Phe Pro Pro Asp Thr Lys Glu Lys Gln Gln Leu 1 5 10 15</pre>	48
aga atg act aaa ctc tgc gat cct gca gaa agt gaa ttg tcg cca ttt Arg Met Thr Lys Leu Cys Asp Pro Ala Glu Ser Glu Leu Ser Pro Phe 20 25 30	96
ctc atc acc tta att tta gca gtt tta ctt gct gaa tac ctc att ggt 1 Leu Ile Thr Leu Ile Leu Ala Val Leu Leu Ala Glu Tyr Leu Ile Gly 35 40 45	.44
atc att gca aat ggt ttc atc atg gct ata cat gca gct gaa tgg gtt 1 Ile Ile Ala Asn Gly Phe Ile Met Ala Ile His Ala Ala Glu Trp Val 50 55 60	.92
caa aat aag gca gtt tcc aca agt ggc agg atc ctg gtt ttc ctg agt 2 Gln Asn Lys Ala Val Ser Thr Ser Gly Arg Ile Leu Val Phe Leu Ser 65 70 75 80	40
gta tcc aga ata gct ctc caa agc ctc atg atg tta gaa att acc atc Val Ser Arg Ile Ala Leu Gln Ser Leu Met Met Leu Glu Ile Thr Ile 85 90 95	88
agc tca acc tcc cta agt ttt tat tct gaa gac gct gta tat tat gca 3: Ser Ser Thr Ser Leu Ser Phe Tyr Ser Glu Asp Ala Val Tyr Tyr Ala 100 105 110	36
ttc aaa ata agt ttt ata ttc tta aat ttt tgt agc ctg tgg ttt gct Phe Lys Ile Ser Phe Ile Phe Leu Asn Phe Cys Ser Leu Trp Phe Ala 115 120 125	84

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	130)				13	5	o va	т гу	s II	e Al 14	a As:	n Ph	e Se	c tac r Tyr	
145					150)	,	221.	9 11	15	5 5	У Ге	ı Il	e Pr	c tgg o Trp 160	480
				165			, ,,,	2 061	170	e Se: 0	r Hi	s Sei	: Mei	Ph:		528
			180			-3-	. Oya	185	ASI	ı sei	r Phe	e Pro) Ile 190	e His	c tcc s Ser	576
		195					200)	ser	. GT	î TT'ê	Asn 205	Val	. Val	ggt Gly	624
	210					215	CLY	446	vaı	. THI	220) Leu	Ile	Met	ttc Phe	672
225					230	-54	110	neu	ser	235	. ьуѕ	Arg	His	Thr	cta Leu 240	720
				245			OLy	per	250	Asp	Pro		Met	Glu 255	Ala	768
cac a			260		-30		C	265	ıyr	rne	ьeu	Ile	Leu 270	Tyr	Ile	816
ttc a Phe A		275					280	+ À T	теп	ser	Asn	Met 285	Phe	Asp	Ile	864
aac a Asn S	290					295	-1-		***	776	300	Ата	Ala	Tyr	Pro	912
gcc a Ala s 305				;	310			CIII	vob	315	Pro	GIY	Leu	Arg	Arg 320	960
gcc t Ala T		agc (ggc 1	tc a Phe 8 325	agc Ser	ttc Phe .	gac Asp	TILE	atc Ile 330	ttt Phe	acc Thr	caa Gln	aag Lys	agt Ser 335	gga Gly	1008
ctc t Leu	ga									•						1014

<210> 26 <211> 337 <212> PRT <213> Homo sapiens

<220>

<221> misc feature

<222> (193)..(193)

<223> The 'Xaa' at location 193 stands for Ser, or Phe.

<220>

<221> misc_feature

<222> (197)..(197)

<223> The 'Xaa' at location 197 stands for Glu, or Lys.

<400> 26

Met Leu Gly Arg Cys Phe Pro Pro Asp Thr Lys Glu Lys Gln Gln Leu 1 5 10 15

Arg Met Thr Lys Leu Cys Asp Pro Ala Glu Ser Glu Leu Ser Pro Phe 20 25 30

Leu Ile Thr Leu Ile Leu Ala Val Leu Leu Ala Glu Tyr Leu Ile Gly 35 40 45

Ile Ile Ala Asn Gly Phe Ile Met Ala Ile His Ala Ala Glu Trp Val 50 55 60

Gln Asn Lys Ala Val Ser Thr Ser Gly Arg Ile Leu Val Phe Leu Ser 65 70 75 80

Val Ser Arg Ile Ala Leu Gln Ser Leu Met Met Leu Glu Ile Thr Ile 85 90 95

Ser Ser Thr Ser Leu Ser Phe Tyr Ser Glu Asp Ala Val Tyr Tyr Ala

Phe Lys Ile Ser Phe Ile Phe Leu Asn Phe Cys Ser Leu Trp Phe Ala 115

Ala Trp Leu Ser Phe Phe Tyr Phe Val Lys Ile Ala Asn Phe Ser Tyr 130 140

Pro Leu Phe Leu Lys Leu Arg Trp Arg Ile Thr Gly Leu Ile Pro Trp 145 150 155 160

Leu Leu Trp Leu Ser Val Phe Ile Ser Phe Ser His Ser Met Phe Cys
165 170 175

Ile Asn Ile Cys Thr Val Tyr Cys Asn Asn Ser Phe Pro Ile His Ser 180 185 190 Xaa Asn Ser Thr Xaa Lys Thr Tyr Leu Ser Glu Ile Asn Val Val Gly
195 200 205

Leu Ala Phe Phe Phe Asn Leu Gly Ile Val Thr Pro Leu Ile Met Phe 210 215 220

Ile Leu Thr Ala Thr Leu Leu Ile Leu Ser Leu Lys Arg His Thr Leu 225 230 235 240

His Met Gly Ser Asn Ala Thr Gly Ser Asn Asp Pro Ser Met Glu Ala 245 250 255

His Met Gly Ala Ile Lys Ala Ile Ser Tyr Phe Leu Ile Leu Tyr Ile 260 270

Phe Asn Ala Val Ala Leu Phe Ile Tyr Leu Ser Asn Met Phe Asp Ile 275 280 280

Asn Ser Leu Trp Asn Asn Leu Cys Gln Ile Ile Met Ala Ala Tyr Pro 290 295 300

Ala Ser His Ser Ile Leu Leu Ile Gln Asp Asn Pro Gly Leu Arg Arg 305 310 315 320

Ala Trp Ser Gly Phe Ser Phe Asp Phe Ile Phe Thr Gln Lys Ser Gly 325 330 335

Leu

<210> 27

<211> 972

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(972)

<220>

<221> variation

<222> (560)..(560)

<223> m is a or c

<220>

<221> variation

<222> (817)..(817)

<223> r is a or g

										4,,	77 /						
•	<40	0>	27														
1	L				5				u 111.	10	ь пЛ	s as	Б 11	e Se	r Ly 15		
				20)			- 14	25	r Gr	λ ττ _ι	e GT	u Cy	s Il 30	e Th	t ggc r Gly	96
			35	_				40	+ NTC	3 TT(е ту:	r GT	y Ala 45	a Gl	u Tr	g gcc p Ala	144
		50					55	- 01.	y wor	, WI	3 176	60 60	t Lei	ı Mei	t Le	g agc u Ser	192
6	5			-		70	- 0		- 117) Met	75	: ьеі	ı Glu	ı Ası	ı Il	t ttc e Phe 80	240
					85	J		y-	. ASII	90	ı Asn	i Ser	: Val	. Туг	: Il 95	c ctc e Leu	288
ti Pi	tc ne	aaa Lys	gto Val	2 at 1 I1 10	c ac e Th: 0	t gto r Vai	c tti L Phe	cto Lev	aac Asn 105	uls	tcc Ser	aat Asn	ctc Leu	tgg Trp	Phe	gct Ala	336
g(A)	cc la	tgg Trp	cto Lei 115	c aa i Ly.	a gto s Vai	c tto l Phe	c tat e Tyr	tgt Cys 120	neu	aga Arg	att	gca Ala	aac Asn 125	Phe	aat Asr	cat His	384
Pr	t :	ttg Leu 130	tto Phe	tte Phe	c cto	g ato 1 Met	g aag Lys 135	9	aaa Lys	atc Ile	ata Ile	gtg Val 140	Leu	atg Met	cct	tgg Trp	432
ct Le 14	t d u 1 5	ctc Leu	agg Arg	cto Lei	g tca Ser	gtg Val		gtt Val	tcc Ser	tta Leu	agc Ser 155	ttc Phe	agc Ser	ttt Phe	cct	ctc Leu 160	480
tc Se	g a	aga Arg	gat Asp	gto Val	ttc Phe 165		gtg Val	tat Tyr	gtg Val	aat Asn 170	agc Ser	tcc Ser	att Ile	cct Pro	atc Ile 175		528
tc Se	c t	cc Ser	aac Asn	tcc Ser 180	acg Thr	gag Glu	aag Lys	aag Lys	tacı Tyr 185	ttc Phe	tmt Xaa	gag Glu	acc Thr	aat Asn 190	atg Met	gtc Val	576
aa Ası	c c	tg eu	gta Val 195	ttt Phe	ttc Phe	tat Tyr	aac Asn	atg Met 200	ggg ggg	atc Ile	ttc Phe	gtt Val	cct Pro 205	ctg Leu	atc Ile	atg Met	624
tto Phe	c a e I 2	tc le 10	ctg Leu	gca Ala	gcc Ala	acc Thr	ctg Leu 215	ctg Leu	atc Ile	ctc Leu	ser	ctc Leu 220	aag Lys	aga Arg	cac His	acc Thr	672
cta Leu 225	e c	ac . is !	atg Met	gga Gly	agc Ser	aat Asn 230	gcc Ala	aca Thr	ggg ggg	Ser	agg Arg 235	gac Asp	ccc Pro	agc Ser	atg Met	aag Lys 240	720

49	14	17
40	/4/	•/

											48/44	7						
					3	245		Lys	AIa	Inr	250	Tyr	Phe	Leu	Ile	Leu 255		768
					260			200	rne	265	ser	Tnr	Ser	Asn	Ile 270	Phe	gac Asp	816
			:	275					280	Суб	тÃ2	TIE	TTE	atg Met 285	Ala	Ala	Tyr	864
		29	0	_				295	Dea	116	ьеи	стХ	300	cct Pro	Gly	Leu	Arg	912
	305			-	-	cgg Arg	ttt Phe 310	cag Gln	cac His	caa Gln	gtt Val	cct Pro 315	ctt Leu	tac Tyr	cta Leu	aaa Lys	ggg Gly 320	960
	cag Gln	ac Th	t c r I	tg eu	tga													972
	<21: <21: <21: <21:	1> 2>	28 32 PR Ho	3 .T	sapi	ens												
	<220 <220 <220 <220	1> 2>	(1	87).	feat (1 {aa'	87)	loca	tion	187	sta	nds	for	Tvr.	or	Ser			
	<220 <221 <222 <223	L> ?>	mi. (2)	sc_f 73).	eati	ure 73)								or '				
•	<400)>	28										·					
ŀ	Met L	Ala	Tì	nr V	al A	Asn 5	Thr :	Asp i	Ala '	Thr i	Asp 1	Lys 1	Asp :	Ile :		Lys 1 15	Phe	
I	yys	Val	Tì	ır P 2	he 1 0	Thr I	Leu v	Val v	/al s	Ser (25	Gly :	(le (Glu (Cys 1	le 1 30	Thr (Sly	
I	le :	Leu	G1 35	ys	er G	Sly I	?he]	lle 1	Thr I	Ala 1	lle T	yr G	Sly F	Ala 6 15	Slu T	rp A	Mla	
A	rg (Gly 50	ьу	s T	hr L	eu I	?ro 1	hr G	Sly A	Asp A	rg I	le M	let I 0	eu M	let L	eu S	er	

Phe Ser Arg Leu Leu Gln Ile Trp Met Met Leu Glu Asn Ile Phe

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Ser	Leu	Leu	Phe	Arg 85	Ile	Val	Tyr	Asn	Gln 90	Asn	Ser	Val	Tyr	Ile 95	Leu
Phe	Lys	Val	Ile 100	Thr	Val	Phe	Leu	Asn 105	His	Ser	Asn	Leu	Trp 110	Phe	Ala
Ala	Trp	Leu 115	Lys	Val	Phe	Tyr	Cys 120	Leu	Arg	Ile	Ala	Asn 125	Phe	Asn	His
Pro	Leu 130	Phe	Phe	Leu	Met	Lys 135	Arg	Lys	Ile	Ile	Val 140	Leu	Met	Pro	Trp
Leu 145	Leu	Arg	Leu	Ser	Val 150	Leu	Val	Ser	Leu	Ser 155	Phe	Ser	Phe	Pro	Leu 160
Ser	Arg	Asp	Val	Phe 165	Asn	Val	Tyr	Val	Asn 170	Ser	Ser	Ile	Pro	Ile 175	Pro
Ser	Ser	Asn	Ser 180	Thr	Glu	Lys	Lys	Tyr 185	Phe	Xaa	Glu	Thr	Asn 190	Met	Val
Asn	Leu	Val 195	Phe	Phe	Tyr	Asn	Met 200	Gly	Ile	Phe	Val	Pro 205	Leu	Ile	Met
Phe	Ile 210	Leu	Ala	Ala	Thr	Leu 215	Leu	Ile	Leu	Ser	Leu 220	Lys	Arg	His	Thr
Leu 225	His	Met	Gly	Ser	Asn 230	Ala	Thr	Gly	Ser	Arg 235	Asp	Pro	Ser	Met	Lys 240
Ala	His	Ile	Gly	Ala 245	Ile	Lys	Ala	Thr	Ser 250	Tyr	Phe	Leu	Ile	Leu 255	Tyr
Ile	Phe	Asn	Ala 260	Ile	Ala	Leu	Phe	Leu 265	Ser	Thr	Ser	Asn	Ile 270	Phe	Asp
Xaa	Tyr	Ser 275	Ser	Trp	Asn	Ile	Leu 280	Cys	Lys	Ile	Ile	Met 285	Ala	Ala	Tyr
Pro	Ala 290	Gly	His	Ser	Val	Gln 295	Leu	Ile	Leu	Gly	Asn 300	Pro	Gly	Leu	Arg
Arg 305	Ala	Trp	Lys	Arg	Phe 310	Gln	His	Gln	Val	Pro 315	Leu	Tyr	Leu	Lys	Gly 320

Gln Thr Leu

<210> 29 <211> 924 <212> DNA <213> Homo sapiens	
<220> <221> CDS <222> (1)(924)	
<220> <221> variation <222> (189)(189) <223> r is a or g	
<220> <221> variation <222> (380)(380) <223> y is t or c	
<220> <221> variation <222> (584)(584) <223> w is a or t	
<pre><400> 29 atg caa gca ctg acg gcc ttc ttc gtg ttg ctc ttt agc ctg ctg Met Gln Ala Ala Leu Thr Ala Phe Phe Val Leu Leu Phe Ser Leu Leu 1</pre>	48
agt ctt ctg ggg att gca gcg aat ggc ttc att gtg ctg gtg ctg ggc Ser Leu Leu Gly Ile Ala Ala Asn Gly Phe Ile Val Leu Gly 20 25 30	96
agg gag tgg ctg cga tat ggc agg ttg ctg ccc ttg gat atg atc ctc Arg Glu Trp Leu Arg Tyr Gly Arg Leu Leu Pro Leu Asp Met Ile Leu 35 40 45	144
att agc ttg ggt gcc tcc cgc ttc tgc ctg cag ttg gtt ggg acr gtg Ile Ser Leu Gly Ala Ser Arg Phe Cys Leu Gln Leu Val Gly Xaa Val 50 55 60	192
cac aac ttc tac tac tct gcc cag aag gtc gag tac tct ggg ggt ctc His Asn Phe Tyr Tyr Ser Ala Gln Lys Val Glu Tyr Ser Gly Gly Leu 70 75 80	240
ggc cga cag ttc ttc cat cta cac tgg cac ttc ctg aac tca gcc acc Gly Arg Gln Phe Phe His Leu His Trp His Phe Leu Asn Ser Ala Thr 85 90 95	288
ttc tgg ttt tgc agc tgg ctc agt gtc ctg ttc tgt gtg aag att gct Phe Trp Phe Cys Ser Trp Leu Ser Val Leu Phe Cys Val Lys Ile Ala 100 105 110	336
aac atc aca cac tcc acc ttc ctg tgg ctg aag tgg agg ttc cya ggg Asn Ile Thr His Ser Thr Phe Leu Trp Leu Lys Trp Arg Phe Xaa Gly 115 120 125	384

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tgg gtg ccc tgg ctc ctg ttg ggc tct gtc ctg atc tcc ttc atc ata Trp Val Pro Trp Leu Leu Gly Ser Val Leu Ile Ser Phe Ile Ile 130 135 140	432
acc ctg ctg ttt ttt tgg gtg aac tac cct gta tat caa gaa ttt tta Thr Leu Leu Phe Phe Trp Val Asn Tyr Pro Val Tyr Gln Glu Phe Leu 145 150 155	480
att aga aaa ttt tct ggg aac atg acc tac aag tgg aat aca agg ata Ile Arg Lys Phe Ser Gly Asn Met Thr Tyr Lys Trp Asn Thr Arg Ile 165 170 175	528
gaa aca tac tat ttc cca tcc ctg aaa ctg gtc atc tgg tca att cct Glu Thr Tyr Tyr Phe Pro Ser Leu Lys Leu Val Ile Trp Ser Ile Pro 180 185 190	576
ttt tct gwt ttt ctg gtc tca att atg ctg tta att aat tct ctg agg Phe Ser Xaa Phe Leu Val Ser Ile Met Leu Leu Ile Asn Ser Leu Arg 200 205	624
agg cat act cag aga atg cag cac aac ggg cac agc ctg cag gac ccc Arg His Thr Gln Arg Met Gln His Asn Gly His Ser Leu Gln Asp Pro 210 215 220	672
agc acc cag gct cac acc aga gct ctg aag tcc ctc atc tcc ttc ctc Ser Thr Gln Ala His Thr Arg Ala Leu Lys Ser Leu Ile Ser Phe Leu 235 240	720
att ctt tat gct ctg tcc ttt ctg tcc ctg atc att gat gcc gca aaa Ile Leu Tyr Ala Leu Ser Phe Leu Ser Leu Ile Ile Asp Ala Ala Lys 245 250 255	768
ttt atc tcc atg cag aac gac ttt tac tgg cca tgg caa att gca gtc Phe Ile Ser Met Gln Asn Asp Phe Tyr Trp Pro Trp Gln Ile Ala Val 260 265 270	816
tac ctg tgc ata tct gtc cat ccc ttc atc ctc atc ttc agc aac ctc Tyr Leu Cys Ile Ser Val His Pro Phe Ile Leu Ile Phe Ser Asn Leu 275 280 285	864
aag ctt cga agc gtg ttc tca cag ctc ctg ttg ttg gca agg ggc ttc Lys Leu Arg Ser Val Phe Ser Gln Leu Leu Leu Leu Ala Arg Gly Phe 290 295 300	912
tgg gtg gcc tga Trp Val Ala 305	924
<210> 30 <211> 307 <212> PRT <213> Homo sapiens	
<pre><220> <221> misc_feature <222> (63)(63) <223> The 'Xaa' at location 63 stands for Thr.</pre>	
<220>	

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									52/44	• /					
<223 <223 <223	2>	misc_ (127) The '	(1	.27)	loca	tion	. 127	' sta	ınds	for	Pro,	or	Leu.		
<220 <221 <222 <223	L> 2>	misc (195) The '	ī(1	.95)	loca	tion	1,95	i sta	ınds	for	Asp,	or	Val.		
<400)>	30								,					
Met 1	Glr	Ala	Ala	Leu 5	Thr	Ala	Phe	Phe	Val 10	Leu	Leu	Phe	Ser	Leu 15	Leu
Ser	Lev	ı Leu	Gly 20	Ile	Ala	Ala	Asn	Gly 25	Phe	Ile	Val	Leu	Val 30	Leu	Gly
Arg	Glu	Trp 35	Leu	Arg	Tyr	Gly	Arg 40	Leu	Leu	Pro	Leu	Asp 45	Met	Ile	Leu
Ile	Sei 50	c Leu	Gly	Ala	Ser	Arg 55	Phe	Суз	Leu	Gln	Leu 60	Val	Gly	Xaa	Val
His 65	Ası	n Phe	Tyr	Tyr	Ser 70	Ala	Gln	Lys	Val	Glu 75	Tyr	Ser	Gly	Gly	Leu 80
Gly	Arq	g Gln	Phe	Phe 85	His	Leu	His	Trp	His 90	Phe	Leu	Asn	Ser	Ala 95	Thr
Phe	Tr	p Phe	Cys 100	Ser	Trp	Leu	Ser	Val 105	Leu	Phe	Cys	Val	Lys 110	Ile	Ala
Asn	Ile	e Thr 115	His	Ser	Thr	Phe	Leu 120	Trp	Leu	Lys	Trp	Arg 125	Phe	Xaa	Gly
Trp	Va:	l Pro O	Trp	Leu	Leu	Leu 135	Gly	Ser	Val	Leu	Ile 140	Ser	Phe	Ile	Ile
Thr 145		u Leu	Phe	Phe	Trp 150	Val	Asn	Tyr	Pro	Val 155		Gln	Glu	Phe	Leu 160
Ile	Ar	g Lys	Phe	Ser 165	Gly	Asn	Met	Thr	Tyr 170	Lys	Trp	Asn	Thr	Arg 175	Ile

Glu Thr Tyr Tyr Phe Pro Ser Leu Lys Leu Val Ile Trp Ser Ile Pro 180 185 190

Phe Ser Xaa Phe Leu Val Ser Ile Met Leu Leu Ile Asn Ser Leu Arg 195 200 205

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Arg His Thr Gln Arg Met Gln His Asn Gly His Ser Leu Gln Asp Pro 210 215 220

Ser Thr Gln Ala His Thr Arg Ala Leu Lys Ser Leu Ile Ser Phe Leu 230 235 240

Ile Leu Tyr Ala Leu Ser Phe Leu Ser Leu Ile Ile Asp Ala Ala Lys 250 255

Phe Ile Ser Met Gln Asn Asp Phe Tyr Trp Pro Trp Gln Ile Ala Val 260 265

Tyr Leu Cys Ile Ser Val His Pro Phe Ile Leu Ile Phe Ser Asn Leu 275 280 285

Lys Leu Arg Ser Val Phe Ser Gln Leu Leu Leu Leu Ala Arg Gly Phe 290 295

Trp Val Ala 305

<210> 31

<211> 930

<212> DNA

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<221> variation <222> (270)..(270) <223> r is a or g

<220>

<221> variation
<222> (460)..(460)
<223> s is g or c

<220>

<221> variation <222> (510)..(510) <223> k is t or g

<220>

<221> variation <222> (599)..(599) <223> k is t or g <220> <221> variation <222> (635)..(635) <223> r is a or g <220> <221> variation <222> (663)..(663) s is g or c <220> <221> variation <222> (882)..(882) <223> k is t or g <220> <221> variation <222> (883)..(883) <223> y is t or c <220> <221> variation <222> (889)..(889) <223> r is a or g <400> 31 atg ata act ttt cta ccc atc att ttt tcc agt ctg gta gtg gtt aca Met Ile Thr Phe Leu Pro Ile Ile Phe Ser Ser Leu Val Val Val Thr 48 ttt gtt att gga aat ttt gct aat ggc ttc ata gca ctg gta aat tcc Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser 96 att gag tsg ttc aag aga caa aag atc tcc ttt gct gac caa att ctc Ile Glu Xaa Phe Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu 144 act gct ctg gcg gtc tcc aga gtt ggt ttg ctc tgg gta tta tta Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu 192 aac tgg tat tca act gtg ttg aat cca gct ttt aat agt gta gaa gta Asn Trp Tyr Ser Thr Val Leu Asn Pro Ala Phe Asn Ser Val Glu Val 240 aga act act gct tat aat atc tgg gca gtr atc aac cat ttc agc aac Arg Thr Thr Ala Tyr Asn Ile Trp Ala Xaa Ile Asn His Phe Ser Asn 288 tgg ctt gct act acc ctc agc ata ttt tat ttg ctc aag att gcc aat Trp Leu Ala Thr Thr Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn 336 ttc tcc aac ttt att ttt ctt cac tta aag agg aga gtt aag agt gtc Phe Ser Asn Phe Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val 384

att ctg gtg atg ttg ttg ggg cct ttg cta ttt ttg gct tgt cat ctt Ile Leu Val Met Leu Leu Gly Pro Leu Leu Phe Leu Ala Cys His Leu 130 135	432
ttt gtg ata aac atg aat gag att gtg sgg aca aaa gaa ttt gaa gga Phe Val Ile Asn Met Asn Glu Ile Val Xaa Thr Lys Glu Phe Glu Gly 150 150	480
aac atg act tgg aag atc aaa ttg aag agk gca atg tac ttt tca aat Asn Met Thr Trp Lys Ile Lys Leu Lys Xaa Ala Met Tyr Phe Ser Asn 165 170 175	528
atg act gta acc atg gta gca aac tta gta ccc ttc act ctg acc cta Met Thr Val Thr Met Val Ala Asn Leu Val Pro Phe Thr Leu Thr Leu 180 185	576
cta tct ttt atg ctg tta atc tkt tct ttg tgt aaa cat ctc aag aag Leu Ser Phe Met Leu Leu Ile Xaa Ser Leu Cys Lys His Leu Lys Lys 195 200 205	624
atg cag ctc crt ggt aaa gga tct caa gat ccc agc acs aag gtc cac Met Gln Leu Xaa Gly Lys Gly Ser Gln Asp Pro Ser Xaa Lys Val His 210 215	672
ata aaa gct ttg caa act gtg atc tcc ttc ctc ttg tta tgt gcc att Ile Lys Ala Leu Gln Thr Val Ile Ser Phe Leu Leu Cys Ala Ile 235 240	720
tac ttt ctg tcc ata atg ata tca gtt tgg agt ttt gga agt ctg gaa Tyr Phe Leu Ser Ile Met Ile Ser Val Trp Ser Phe Gly Ser Leu Glu 245 250 255	768,
aac aaa cct gtc ttc atg ttc tgc aaa gct att aga ttc agc tat cct Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro 260 265 270	816
tca atc cac cca ttc atc ctg att tgg gga aac aag aag cta aag cag Ser Ile His Pro Phe Ile Leu Ile Trp Gly Asn Lys Leu Lys Gln 275 280 285	864
act ttt ctt tca gtt ttk ygg caa rtg agg tac tgg gtg aaa gga gag Thr Phe Leu Ser Val Xaa Xaa Gln Xaa Arg Tyr Trp Val Lys Gly Glu 290 295 300	912
aag act tca tct cca tga Lys Thr Ser Ser Pro 305	930
<210> 32 <211> 309 <212> PRT <213> Homo sapiens	
<pre><220> <221> misc_feature <222> (35)(35) <223> The 'Xaa' at location 35 stands for Trp, or Ser.</pre>	
<220>	

<220>

56/447 <221> misc feature <222> (90)..(90) <223> The 'Xaa' at location 90 stands for Val. <220> <221> misc_feature <222> (154)..(154) <223> The 'Xaa' at location 154 stands for Gly, or Arg. <220> <221> misc_feature <222> (170)..(170) <223> The 'Xaa' at location 170 stands for Arg, or Ser. <220> <221> misc feature <222> (200)..(200) <223> The 'Xaa' at location 200 stands for Cys, or Phe. <220> <221> misc_feature <222> (212)..(212) <223> The 'Xaa' at location 212 stands for Arg, or His. <220> <221> misc_feature <222> (221)..(221) <223> The 'Xaa' at location 221 stands for Thr. <220> <221> misc_feature <222> (294)..(294) <223> The 'Xaa' at location 294 stands for Leu, or Phe. <220> <221> misc_feature <222> (295)..(295) <223> The 'Xaa' at location 295 stands for Arg, or Trp. <220> <221> misc_feature <222> (297)..(297) <223> The 'Xaa' at location 297 stands for Val, or Met. <400> 32 Met Ile Thr Phe Leu Pro Ile Ile Phe Ser Ser Leu Val Val Thr Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser Ile Glu Xaa Phe Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu

Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu

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Asn 65	Trp	Tyr	Ser	Thr	Val 70	Leu	Asn	Pro	Ala	Phe 75	Asn	Ser	Val	Glu	Val 80
Arg	Thr	Thr	Ala	Tyr 85	Asn	Ile	Trp	Ala	Xaa 90	Ile	Asn	His	Phe	Ser 95	Asn
Trp	Leu	Ala	Thr 100	Thr	Leu	Ser	Ile	Phe 105	Tyr	Leu	Leu	Lys	Ile 110	Ala	Asn
Phe	Ser	Asn 115	Phe	Ile	Phe	Leu	His 120	Leu	Lys	Arg	Arg	Val 125	Lys	Ser	Val
Ile	Leu 130	Val	Met	Leu	Leu	Gly 135	Pro	Leu	Leu	Phe	Leu 140	Ala	Суз	His	Leu
Phe 145	Val	Ile	Asn	Met	Asn 150	Glu	Ile	Val	Xaa	Thr 155	Lуз	Glu	Phe	Glu	Gly 160
Asn	Met	Thr	Trp	Lys 165	Ile	Lys	Leu	Lys	Xaa 170	Ala	Met	Tyr	Phe	Ser 175	Asn
Met	Thr	Val	Thr 180	Met	Val	Ala	Asn	Leu 185	Val	Pro	Phe	Thr	Leu 190	Thr	Leu
Leu	Ser	Phe 195	Met	Leu	Leu	Ile	Xaa 200	Ser	Leu	Cys	Lуs	His 205	Leu	Lys	Lys
Met	Gln 210	Leu	Xaa	Gly	Lys	Gly 215	Ser	Gln	Asp	Pro	Ser 220	Xaa	Lys	Val	His
Ile 225	Lys	Ala	Leu	Gln	Thr 230	Val	Ile	Ser	Phe	Leu 235	Leu	Leu	Cys	Ala	Ile 240
Tyr	Phe	Leu	Ser	Ile 245	Met	Ile	Ser	Val	Trp 250	Ser	Phe	Gly	Ser	Leu 255	Glu
Asn	ГÀ́г	Pro	Val 260	Phe	Met	Phe	Cys	Lys 265	Ala	Ile	Arg	Phe	Ser 270	Tyr	Pro
Ser	Ile	His 275	Pro	Phe	Ile	Leu	Ile 280	Trp	Gly	Asn	Lys	Lys 285	Leu	Lys	Gln
Thr	Phe 290	Leu	Ser	Val	Xaa	Xaa 295	Gln	Xaa	Arg	Tyr	Trp 300	Val	Lys	Gly	Glu

Lys Thr Ser Ser Pro 305 <210> 33 <211> 930 <212> DNA <213> Homo sapiens <220> <221> CDS <222> (1)..(930) <220> <221> variation <222> (103)..(103) <223> y is t or c <220> <221> variation <222> (484)..(484) <223> w is a or t <220> <221> variation <222> (599)..(599) <223> r is a or g <220> <221> variation <222> (649)..(649) <223> s is g or c <220> <221> variation <222> (680)..(680) <223> y is t or c <220> <221> variation <222> (718)..(718) <223> r is a or g <220> <221> variation <222> (744)..(744) <223> r is a or g <220> <221> variation <222> (827)..(827) <223> s is g or c <220> <221> variation <222> (843)..(843) <223> r is a or g <400> 33 atg aca act ttt ata ece ate att ttt tee agt gtg gta gtg gtt eta

									37/44	,							
Met 1	Thr	Thr	Phe	Ile 5	Pro	Ile	Ile	Phe	Ser 10	Ser	Val	Val	Val	Val 15	Leu		
ttt Phe	gtt Val	att Ile	gga Gly 20	aat Asn	ttt Phe	gct Ala	aat Asn	ggc Gly 25	ttc Phe	ata Ile	gca Ala	ttg Leu	gta Val 30	aat Asn	tcc Ser	96	
att Ile	gag Glu	ygg Xaa 35	gtc Val	aag Lys	aga Arg	caa Gln	aag Lys 40	atc Ile	tct Ser	ttt Phe	gct Ala	gac Asp 45	cag Gln	att Ile	ctc Leu	144	
act Thr	gct Ala 50	ctg Leu	gcg Ala	gtc Val	tcc Ser	aga Arg 55	gtt Val	ggt Gly	ttg Leu	ctc Leu	tgg Trp 60	gta Val	tta Leu	tta Leu	tta Leu	192	
aat Asn 65	tgg Trp	tat Tyr	tca Ser	act Thr	gtg Val 70	ttt Phe	aat Asn	cca Pro	gct Ala	ttt Phe 75	tat Tyr	agt Ser	gta Val	gaa Glu	gta Val 80	240	
aga Arg	act Thr	act Thr	gct Ala	tat Tyr 85	aat Asn	gtc Val	tgg Trp	gca Ala	gta Val 90	acc Thr	ggc Gly	cat His	ttc Phe	agc Ser 95	aac Asn	288	
tgg Trp	ctt Leu	gct Ala	act Thr 100	agc Ser	ctc Leu	agc Ser	ata Ile	ttt Phe 105	tat Tyr	ttg Leu	ctc Leu	aag Lys	att Ile 110	gcc Ala	aat Asn	336	
ttc Phe	tcc Ser	aac Asn 115	ctt Leu	att Ile	ttt Phe	ctt Leu	cac His 120	tta Leu	aag Lys	agg Arg	aga Arg	gtt Val 125	aag Lys	agt Ser	gtc Val	384	
att Ile	ctg Leu 130	gtg Val	atg Met	ctg Leu	ttg Leu	ggg Gly 135	cct Pro	tta Leu	cta Leu	ttt Phe	ttg Leu 140	gcy Ala	tgt Cys	caa Gln	ctt Leu	432	
ttt Phe 145	gtg Val	ata Ile	aac Asn	atg Met	aaa Lys 150	gag Glu	att Ile	gta Val	cgg Arg	aca Thr 155	aaa Lys	gaa Glu	tat Tyr	gaa Glu	gga Gly 160	480	
aac Asn	wtg Xaa	act Thr	tgg Trp	aag Lys 165	atc Ile	aaa Lys	ttg Leu	agg Arg	agt Ser 170	gca Ala	gtg Val	tac Tyr	ctt Leu	tca Ser 175	gat Asp	528	
gcg Ala	act Thr	gta Val	acc Thr 180	acg Thr	cta Leu	gga Gly	aac Asn	tta Leu 185	gtg Val	ccc Pro	ttc Phe	act Thr	ctg Leu 190	acc Thr	ctg Leu	576	
cta Leu	tgt Cys	ttt Phe 195	ttg Leu	ctg Leu	tta Leu	atc Ile	trt Xaa 200	tct Ser	ctg Leu	tgt Cys	aaa Lys	cat His 205	ctc Leu	aag Lys	aag Lys	624	
atg Met	cag Gln 210	ctc Leu	cat His	ggt Gly	aaa Lys	gga Gly 215	tct Ser	saa Xaa	gat Asp	ccc Pro	agc Ser 220	acc Thr	aag Lys	gtc Val	cac His	672	
ata Ile 225	aaa Lys	gyt Xaa	ttg Leu	caa Gln	act Thr 230	gtg Val	atc Ile	ttt Phe	ttc Phe	ctc Leu 235	ttg Leu	tta Leu	tgt Cys	gcc Ala	rtt Xaa 240	720	
tac Tyr	ttt Phe	ctg Leu	tcc Ser	ata Ile	atg Met	ata Ile	tcr Xaa	gtt Val	tgg Trp	agt Ser	ttt Phe	GJ Å aaa	agt Ser	ctg Leu	gaa Glu	768	

816

864

912

930

60/447

245 250 255 aac aaa cct gtc ttc atg ttc tgc aaa gct att aga ttc agc tat cct Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro 265 tca atc cac csa ttc atc ctg att tgr gga aac aag aag cta aag cag Ser Ile His Xaa Phe Ile Leu Ile Xaa Gly Asn Lys Lys Leu Lys Gln act ttt ctt tca gtt ttg cgg caa gtg agg tac tgg gtg aaa gga gag Thr Phe Leu Ser Val Leu Arg Gln Val Arg Tyr Trp Val Lys Gly Glu aag cct tca tct cca tga Lys Pro Ser Ser Pro 305 <210> 34 <211> 309 <212> PRT <213> Homo sapiens <220> <221> misc_feature <222> (35)..(35) <223> The 'Xaa' at location 35 stands for Arg, or Trp. <220> <221> misc_feature <222> (162)..(162)<223> The 'Xaa' at location 162 stands for Met, or Leu. <220> <221> misc_feature <222> (200)...(200)<223> The 'Xaa' at location 200 stands for Cys, or Tyr. <220> <221> misc_feature <222> (217)...(217)<223> The 'Xaa' at location 217 stands for Glu, or Gln. <220> <221> misc_feature <222> (227)..(227) (227)..(227) <223> The 'Xaa' at location 227 stands for Ala, or Val. <220> <221> misc_feature <222> (240)...(240)<223> The 'Xaa' at location 240 stands for Val, or Ile. <220> <221> misc_feature <222> (248)..(248)<223> The 'Xaa' at location 248 stands for Ser. <220> <221> misc_feature

<222> (276)..(276)

<223> The 'Xaa' at location 276 stands for Arg, or Pro.

<220>

<221> misc_feature

<222> (281)..(281)

<223> The 'Xaa' at location 281 stands for Trp.

<400> 34

Met Thr Thr Phe Ile Pro Ile Ile Phe Ser Ser Val Val Val Leu

Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser

Ile Glu Xaa Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu

Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu

Asn Trp Tyr Ser Thr Val Phe Asn Pro Ala Phe Tyr Ser Val Glu Val

Arg Thr Thr Ala Tyr Asn Val Trp Ala Val Thr Gly His Phe Ser Asn

Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn 105

Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val 120

Ile Leu Val Met Leu Leu Gly Pro Leu Leu Phe Leu Ala Cys Gln Leu

Phe Val Ile Asn Met Lys Glu Ile Val Arg Thr Lys Glu Tyr Glu Gly 160

Asn Xaa Thr Trp Lys Ile Lys Leu Arg Ser Ala Val Tyr Leu Ser Asp 170

Ala Thr Val Thr Thr Leu Gly Asn Leu Val Pro Phe Thr Leu Thr Leu 190

Leu Cys Phe Leu Leu Leu Ile Xaa Ser Leu Cys Lys His Leu Lys Lys 200

Met Gln Leu His Gly Lys Gly Ser Xaa Asp Pro Ser Thr Lys Val His 215

Ile Lys Xaa Leu Gln Thr Val Ile Phe Phe Leu Leu Cys Ala Xaa

Tyr Phe Leu Ser Ile Met Ile Xaa Val Trp Ser Phe Gly Ser Leu Glu

Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro

Ser Ile His Xaa Phe Ile Leu Ile Xaa Gly Asn Lys Lys Leu Lys Gln 280

Thr Phe Leu Ser Val Leu Arg Gln Val Arg Tyr Trp Val Lys Gly Glu 295

Lys Pro Ser Ser Pro 305

<210> 35

<211> 900

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(900)

<220>

<221> variation

<222> (106)..(106)

<223> k is g or t

<220>

<221> variation

<222> (682)..(682)

<223> w is a or t

<220>

<221> variation

<222> (749)..(749)

<223> r is a or g

<220>

<221> variation

<222> (862)..(862)

<223> y is c or t

<400> 35

atg ata act ttt ctg ccc atc att ttt tcc att cta ata gtg gtt aca

										63	3/447							(C1/U	32004/01948
									Le Pl	Τ.	U					1	5		
			:	20					at go sn Gl 25	; ;	ie T	те	Ата	те:	u Va 30	il A	sn	Ser	96
		3.	5		-		,	40		.e 56	at. B	ne	Ala	Ası 45	9 G1	n Il	Le .	Leu	144
	50						55	9 14	t gg l Gl	у те	:u "	eu	Trp	Val	L Le	u Va	11 :	Leu	192
65			•			70		α 21 <u>0</u> .	t cc n Pr	OAL	a P.	ne 5	Asn	Ser	: Il	e Gl	u \ {	/al 30	240
					85			,	g gca	90	- 1.	Le .	Asn	His	Phe	95 Se	r P	Asn	288
			1	00					e tti Phe 105	5 1.Y	r re	eu.	Leu	Lys	Ile 11(al Al	a A	sn	336
		11	5					120		т пу	5 AI	g z	arg	Val 125	Lys	Se:	r V	al	384
	130						135		ttg Leu	, ne	ı PN	e 1	Jeu L40	Val	Cys	His	3 L	eu	432
145						150			ata Ile		15	5	ıγs	GIU	туг	Gli	1 G. 1	ly 60	480
				1	65		•		agg Arg	170) - 1217.0	3 M	iet	Tyr	Leu	Ser 175	As	sn	528
		,	18	0				21011	tta Leu 185	val	Pro	ייי כ	ne :	Thr	Leu 190	Thr	Ŀ∈	eu	576
ata Ile		195						200	per	neu	Cys	(بر ۽	ys P 2	His 205	Leu	Lys	Ъy	'S	624
atg Met	cag Gln 210	ctc Leu	ca Hi	t g s G	gc a	-2 -	gga Gly 215	tct Ser	caa Gln	gat Asp	ecc	56	gc a er M 20	atg Met 1	aag Lys	gtc Val	ca Hi	c s	672
ata Ile: 225					2	230			per	rne	235	₽€	eu L	eu (Cys	Ala	I1 24	e 0	720
tac i	ttt Phe	ctg Leu	tc: Se:	c at	ta a le I	itc a	atg Met	tca Ser	gtt Val	trg Xaa	agt Ser	tt Ph	t g le G	ag a	agt Ser	ctg Leu			768

WO 2005/007891 PCT/US2004/019489 64/447 245 250 255 aac aaa cct gtc ttc atg ttc tgc gaa gct att gca ttc agc tat cct Asn Lys Pro Val Phe Met Phe Cys Glu Ala Ile Ala Phe Ser Tyr Pro 816 260 265 tca acc cac cca ttc atc ctg att tgg gga aac aag aag cta aag yag Ser Thr His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Xaa 864

act ttt ctt tca gtt ttg tgg caa atg agg tac tga 900 Thr Phe Leu Ser Val Leu Trp Gln Met Arg Tyr

<210> 36 <211> 299 <212> PRT

<213> Homo sapiens

<220> <221> misc_feature <222> (36)..(36)

<223> The 'Xaa' at location 36 stands for Val, or Phe.

<220> <221> misc_feature <222> (228)..(228)

<223> The 'Xaa' at location 228 stands for Met, or Leu.

<220>

<221> misc_feature <222> (250)..(250)

<223> The 'Xaa' at location 250 stands for Trp.

<220>

<221> misc_feature <222> (288)..(288)

<223> The 'Xaa' at location 288 stands for Gln.

<400> 36

Met Ile Thr Phe Leu Pro Ile Ile Phe Ser Ile Leu Ile Val Val Thr 5 10

Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser 20 25

Ile Glu Trp Xaa Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu 35 40

Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Val Leu 50 55

Asn Trp Tyr Ala Thr Glu Leu Asn Pro Ala Phe Asn Ser Ile Glu Val 70 75

Arg	Ile	Thr	Ala	Tyr 85	Asn	Val	Trp	Ala	Val 90	Ile	Asn	His	Phe	Ser 95	Asn
-----	-----	-----	-----	-----------	-----	-----	-----	-----	-----------	-----	-----	-----	-----	-----------	-----

Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn 105

Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val 120

Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu 135

Phe Val Ile Asn Met Asn Gln Ile Ile Trp Thr Lys Glu Tyr Glu Gly 150

Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr Leu Ser Asn 165 170

Thr Thr Val Thr Ile Leu Ala Asn Leu Val Pro Phe Thr Leu Thr Leu 180 185

Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys 195 200

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Met Lys Val His 215 220

Ile Lys Ala Xaa Gln Thr Val Thr Ser Phe Leu Leu Cys Ala Ile 230 235

Tyr Phe Leu Ser Ile Ile Met Ser Val Xaa Ser Phe Glu Ser Leu Glu 245 250 255

Asn Lys Pro Val Phe Met Phe Cys Glu Ala Ile Ala Phe Ser Tyr Pro 260 265

Ser Thr His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Xaa 275

Thr Phe Leu Ser Val Leu Trp Gln Met Arg Tyr 290

<210> 37

<211> 929

<212> DNA <213> Homo sapiens

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ttt Phe	gtt Val	att Ile	gga Gly 20	aat Asn	ttt Phe	gct Ala	aat Asn	ggc Gly 25	ttc Phe	ata Ile	gca Ala	ttg Leu	gta Val 30	aat Asn	tcc Ser	96
att Ile	gag Glu	tgg Trp 35	gtc Val	aag Lys	aga Arg	caa Gln	aag Lys 40	atc Ile	tcc Ser	ttt Phe	gtt Val	gac Asp 45	caa Gln	att Ile	ctc Leu	144
act Thr	gct Ala 50	ctg Leu	gcg Ala	gtc Val	tcc Ser	aga Arg 55	gtt Val	ggt Gly	ttg Leu	ctc Leu	tgg Trp 60	gtg Val	tta Leu	tta Leu	cta Leu	192
cat His 65	tgg Trp	tat Tyr	gca Ala	act Thr	cag Gln 70	ttg Leu	aat Asn	cca Pro	gct Ala	ttt Phe 75	tat Tyr	agt Ser	gta Val	gaa Glu	gta Val 80	240
9	***	1111	ALG	85	ASN	vaı	Trp	Ala	gta Val 90	Thr	Asn	His	Phe	Ser 95	Ser	288
rrp	нец	ALA	100	ser	теп	Ser	Met	Phe 105	tat Tyr	Leu	Leu	Arg	Ile 110	Ala	Asn	336
ttc Phe	tcc Ser	aac Asn 115	ctt Leu	att Ile	ttt Phe	ctt Leu	cgc Arg 120	ata Ile	aag Lys	agg Arg	aga Arg	gtt Val 125	aag Lys	agt Ser	gtt Val	384
Val	130	Val	тте	ьeu	ьeu	135	Pro	Leu	cta Leu	Phe	Leu 140	Val	Суѕ	His	Leu	432
145	vaı	TTG	ASI	мет	150	GLu	Thr	Val	tgg Trp	Thr 155	Lys	Glu	Tyr	Glu	Gly 160	480
	VUL	1111	iip	165	тте	тÀ2	Leu	Arg	agt Ser 170	Ala	Met	Tyr	His	Ser 175	Asn	528
Hec	IIIL	ren	180	Met	Leu	Ala	Asn	Phe 185	gta Val	Pro	Leu	Thr	Leu 190	Thr	Leu	576
*16	Set	195	ьeu	ьeu	ьeu	TTE	Cys 200	Ser	ctg Leu	Cys	Lys	His 205	Leu	Lys	Lys	624
atg Met	cag Gln	ctc Leu	cat His	ggc Gly	aaa Lys	gga Gly	tct Ser	caa Gln	gat Asp	ccc Pro	agc Ser	acc Thr	aag Lys	gtc Val	cac His	672

									67/44	7				J	PCT/US200	4/01948
	210					215					220					
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tac Tyr	ttt Phe	ctg Leu	tcc Ser	atg Met 245	atc Ile	ata Ile	tca Ser	gtt Val	tgt Cys 250	aat Asn	ttt Phe	GJ À aaa	agg Arg	ctg Leu 255	gaa Glu	768
aag Lys	caa Gln	cct Pro	gtc Val 260	ttc Phe	atg Met	ttc Phe	tgc Cys	caa Gln 265	gct Ala	att Ile	ata Ile	ttc Phe	agc Ser 270	tat Tyr	cct Pro	816
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att Ile	ttt Phe 290	ctt Leu	tca Ser	gtt Val	ttg Leu	cgg Arg 295	cat His	gtg Val	agg Arg	tac Tyr	tgg Trp 300	gtg Val	aaa Lys	gac Asp	aga Arg	912
agc Ser 305	ctt Leu	cgt Arg	ctc Leu	cat His	ga											929
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Phe	Val	İle	Gly 20	Asn	Phe	Ala	Asn	Gly 25	Phe	Ile	Ala	Leu	Val 30	Asn	Ser	
Ile	Glu	Trp 35	Val	Lys	Arg	Gln	Lys 40	Ile	Ser	Phe	Val	Asp 45	Gln	Ile	Leu	
Thr	Ala 50	Leu	Ala	Val	Ser	Arg 55	Val	Gly	Leu	Leu	Trp 60	Val	Leu	Leu	Leu	
His 65	Trp	Tyr	Ala	Thr	Gln 70	Leu	Asn	Pro	Ala	Phe 75	Tyr	Ser	Val	Glu	Val 80	
Arg	Ile	Thr	Ala	Tyr 85	Asn	Val	Trp	Ala	Val 90	Thr	Asn	His	Phe	Ser 95	Ser	
Trp	Leu	Ala	Thr 100	Ser	Leu	Ser	Met	Phe 105	Tyr	Leu	Leu	Arg	Ile 110	Ala	Asn	

Phe Ser Asn Leu Ile Phe Leu Arg Ile Lys Arg Arg Val Lys Ser Val 115 120 125

Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu 130 135 140

Phe Val Ile Asn Met Asp Glu Thr Val Trp Thr Lys Glu Tyr Glu Gly 155 160

Asn Val Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr His Ser Asn 165 170 175

Met Thr Leu Thr Met Leu Ala Asn Phe Val Pro Leu Thr Leu Thr Leu 180 185 190

Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His 210 215 220

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Leu Cys Ala Ile 225 230 235 240

Tyr Phe Leu Ser Met Ile Ile Ser Val Cys Asn Phe Gly Arg Leu Glu 245 250 255

Lys Gln Pro Val Phe Met Phe Cys Gln Ala Ile Ile Phe Ser Tyr Pro 260 265 270

Ser Thr His Pro Phe Ile Leu Ile Leu Gly Asn Lys Lys Leu Lys Gln 275 280 285

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Ser Leu Arg Leu His 305

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40

act gct ctg gtg gtc tcc aga att ggt tta ctc tgg gtc atg tta ttc

45

												70/4	147							101/	032004/01946
	Th	ır A 5	la 0	Let	ı Va	l Va	ıl Se	er A 5	rg] 5	le	Gl ₂	y Le	u I	Leu	Trp 60	⊃ Va	l Me	et	Leu	Phe	
	65						70)	•	-011	561	. AI	7	eu 5	туг	GL	у Ге	eu	Glu	gta Val 80	240
						85			-	-6	*****	90	- 1	II.L	Asn	HI.	s Ph	ie :	Ser 95	atg Met	288
					100)					105	Cy.	SГ	eu	ьeu	Xaa	a Il 11	е 7 0	4la	aat Asn	336
	Phe	e to	er	aac Asn 115	ctt Leu	ati Ile	t tc e Se	t ct r Le		ac is 20	cta Leu	aaq Lys	ga sL	ag ys	aga Arg	att Ile 125	: Ly	g a	igt Ser	gtt Val	384
	gtt Val	: ct . Le 13	g u l0	gtg Val	ata Ile	Lei	tt: Le:	g gg u Gl 13	<i>x</i>	cc ro	ttg Leu	gta Val	a ti	ne	ytg Xaa 140	att Ile	tg Cy	t a s A	at sn	ctt Leu	432
	145					atç Met	150)	~ 21¢		val	ırç	15	ır 55	гуs	Glu	Ty:	r G	lu	Gly 160	480
	,				-	aag Lys 165				, u	ran g	170	I AI	.a .	тте	His	Let	ı S 1	er 75	Ser	528
					180	act Thr			~ ?1C		185	тте	Pr	0	Phe	Thr	Let 190	ıSı)	er	Leu	576
			1	95		ctg Leu			20	0	J C1	neu	Су	S 1	ьys	His 205	Leu	L	ys :	Lys	624
		210)			agc Ser	•	215	;			den	ET.	2	er 220	Thr	Lys	Va	al B	lis	672
2	225					caa Gln	230		- 11.		er	Fue	23!	им 5	let]	Leu	Phe	Al	.a } 2	(aa !40	720
						ata Ile 245			50.	- 1	2	250	ASI	1 1.	eu A	Arg	Thr	G1 25	n G 5	ln	768
S	gc er	aaa Lys	Le	eu (yta Val 1860	ctc Leu	ctg Leu	ctt Leu	tgo Cys	, G	aa a ln : 65	act Thr	stt Xaa	g a A	ca a la 1	[le	atg Met 270	ta Ty	t c r P	ct ro	816
t S	ca er	ttc Phe	са Ні 27	ac t .s 5 75	ca :	ttc Phe	atc Ile	ctg Leu	att Ile 280		tg q et G	gga Sly	agt Ser	: a	rg L	ag ys :	cta Leu	aa Ly	a c s G	ag ln	864
a T	cc hr :	ttt Phe	ct Le	t t u S	er (gtt /al	ttg Leu	tgr Xaa	cag Gln	at Me	tg a ∋t I	ca hr	ygc Xaa	t	ga						900

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295

290

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 <222> (109)..(109)
 <223> The 'Xaa' at location 109 stands for Lys, or Thr.
 <220>
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 <222> (140)..(140)
 <223> The 'Xaa' at location 140 stands for Leu.
 <220>
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 <222> (152)..(152)
<223> The 'Xaa' at location 152 stands for Arg, or Ser.
<220>
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<222> (225)..(225)
<223> The 'Xaa' at location 225 stands for Val, or Ile.
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<222> (240)..(240)
<223> The 'Xaa' at location 240 stands for Thr, or Ile.
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<222> (267)..(267)
<223> The 'Xaa' at location 267 stands for Val, or Leu.
<220>
<221> misc_feature
<222> (295)..(295)
<223> The 'Xaa' at location 295 stands for Trp.
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      (299)..(299)
<223> The 'Xaa' at location 299 stands for Arg, or Cys.
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Phe Val Leu Gly Asn Val Ala Asn Gly Phe Ile Ala Leu Val Asn Xaa 20 25 30

Ile	Asp	Trp 35	Val	Asn	Thr	Arg	Lys 40	Ile	Ser	Ser	Ala	Glu 45	Gln	Ile	Leu
Thr	Ala 50	Leu	Val	Val	Ser	Arg 55	Ile	Gly	Leu	Leu	Trp 60	Val	Met	Leu	Phe

- Leu Trp Tyr Ala Thr Val Phe Asn Ser Ala Leu Tyr Gly Leu Glu Val 70
- Arg Ile Val Ala Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Met 85
- Trp Leu Ala Ala Ser Leu Ser Ile Phe Cys Leu Leu Xaa Ile Ala Asn 100 . 105
- Phe Ser Asn Leu Ile Ser Leu His Leu Lys Lys Arg Ile Lys Ser Val 115 120
- Val Leu Val Ile Leu Leu Gly Pro Leu Val Phe Xaa Ile Cys Asn Leu 130 135
- Ala Val Ile Thr Met Asp Glu Xaa Val Trp Thr Lys Glu Tyr Glu Gly 145 150
- Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Ser 165
- Leu Thr Val Thr Thr Leu Ala Asn Leu Ile Pro Phe Thr Leu Ser Leu 180
- Ile Cys Phe Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys 195 200
- Met Arg Leu His Ser Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His
- Xaa Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Met Leu Phe Ala Xaa 230 235
- Tyr Phe Leu Cys Ile Ile Thr Ser Thr Trp Asn Leu Arg Thr Gln Gln 250
- Ser Lys Leu Val Leu Leu Cys Gln Thr Xaa Ala Ile Met Tyr Pro 265

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48

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				_					10					15		
			20			- 1110	, WOI	25	y Pne	; TT6	∋ Ala	a Lei	۱۱۰ د 30	e As	t ttc n, Phe	96
att Ile	gco Ala	tgg Trp 35	g gto Val	aaq Lys	g aga s Arg	a caa g Glr	a a a c a Lys 40	g ato S Ile	e tec	tca Ser	a gct Ala	t gat a Asp 45	caa Glr	a at	t att e Ile	144
gct Ala	gct Ala 50	cto Lev	ger Ala	gto Val	tco Ser	aaa Lys 55	gtt Val	ggt Gly	ttg Leu	cto Leu	tgç Trp 60	g gta Val	ata . Ile	tt:	a tta ı Leu	192
cat His 65	tgg Trp	tat Tyr	tca Ser	act Thr	gtg Val 70	ttg Leu	aat Asn	cca Pro	act Thr	tca Ser 75	tct Ser	aat Asn	tta Leu	ı aaa ı Lys	a gta 5 Val 80	240
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tgg Trp	ctt Leu	gct Ala	act Thr 100		ctc Leu	agc Ser	ata Ile	ttt Phe 105	Tyr	ttg Leu	ctc Leu	aag Lys	atc Ile 110	Val	aat Asn	336
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ata Ile	tct Ser	ttt Phe 195	ctg Leu	ctg Leu	tta Leu	atc Ile	tac Tyr 200	tct Ser	ctg Leu	tgt Cys	aaa Lys	cat His 205	ctg Leu	aag Lys	aag Lys	624
atg Met	cag Gln 210	ctc Leu	cat His	Gly ggc	aaa Lys	gga Gly 215	tct Ser	caa Gln	gat Asp	Pro	agc Ser 220	acc Thr	aag Lys	atc Ile	cac His	672
ata Ile : 225	aaa Lys	gct Ala	ctg Leu		act Thr 230	gtg Val	acc Thr	tcc Ser	rne	ctc Leu 235	rta Xaa	tta Leu	ctt Leu	gcc Ala	att Ile 240	720
tac (Tyr)	ttt Phe	ctg Leu	tgt Cys :	cta Leu	atc Ile	ata; Ile :	tcg Ser	ttt Phe	tgg : Trp :	aat Asn :	tyt Xaa	aag Lys	atg Met	cka Xaa		768

WO 2005/007891 PCT/US2004/019489 75/447 245 250 aaa gaa att gtc tta atg ctt tgc caa gct ttt gga atc rta tat cca 816 Lys Glu Ile Val Leu Met Leu Cys Gln Ala Phe Gly Ile Xaa Tyr Pro

260 265 tca ttc cac tca ttc att ctg att tgg ggg aac aag acg cta aag cag 864

Ser Phe His Ser Phe Ile Leu Ile Trp Gly Asn Lys Thr Leu Lys Gln

acc ttt ctt tca gtt ttg tgg cag gtg act tgc tgg gca aaa gga cag 912 Thr Phe Leu Ser Val Leu Trp Gln Val Thr Cys Trp Ala Lys Gly Gln 295

aac cag tca act cca tag 930 Asn Gln Ser Thr Pro 305

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<213> Homo sapiens

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<223> The 'Xaa' at location 141 stands for Val, or Ile.

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<223> The 'Xaa' at location 143 stands for Gln, or His.

<220>

<221> misc_feature <222> (148)..(148)

<223> The 'Xaa' at location 148 stands for Asn, or His.

<220>

<221> misc feature <222> (172)..(172)

<223> The 'Xaa' at location 172 stands for Met, or Ile.

<220>

<221> misc_feature <222> (236)..(236)

<223> The 'Xaa' at location 236 stands for Val, or Ile.

<220>

<221> misc_feature <222> (252)..(252)

<223> The 'Xaa' at location 252 stands for Ser, or Phe.

<220>

<221> misc_feature

<222> (255)..(255)

<223> The 'Xaa' at location 255 stands for Arg, or Leu.

<220>

<221> misc_feature

<222> (270)..(270)

<223> The 'Xaa' at location 270 stands for Val, or Ile.

<400> 42

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Phe Ile Leu Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Ile Asn Phe 20 25 30

Ile Ala Trp Val Lys Arg Gln Lys Ile Ser Ser Ala Asp Gln Ile Ile 35 40 45

Ala Ala Leu Ala Val Ser Lys Val Gly Leu Leu Trp Val Ile Leu Leu 50 60

His Trp Tyr Ser Thr Val Leu Asn Pro Thr Ser Ser Asn Leu Lys Val 65 70 75 80

Ile Ile Phe Ile Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Ile 85 90 95

Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Val Asn 100 105 110

Phe Ser Arg Leu Ile Phe His His Leu Lys Arg Lys Ala Lys Ser Val 115 120 125

Val Leu Val Ile Val Leu Gly Ser Leu Phe Phe Leu Xaa Cys Xaa Leu 130 135 140

Val Met Lys Xaa Thr Tyr Ile Asn Val Trp Thr Glu Glu Cys Glu Gly 145 150 155 160

Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Xaa His Leu Ser Asn 165 170 175

Leu Thr Val Ala Met Leu Ala Asn Leu Ile Pro Phe Thr Leu Thr Leu 180 185 190

Ile Ser Phe Leu Leu Leu Ile Tyr Ser Leu Cys Lys His Leu Lys Lys 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Ile His 210 220

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0 2000/00/051		PCT/US2004/019489
	77/447	- 0 - 0 0 0 0 0 0 1 0 1 0 4 0 0
	///44/	

Ile 225	Lys	Ala	Leu	Gln	Thr 230	Val	Thr	Ser	Phe	Leu 235	Xaa	Leu	Leu	Ala	Ile 240	
Tyr	Phe	Leu	Cys	Leu 245	Ile	Ile	Ser	Phe	Trp 250	Asn	Xaa	Lys	Met	Xaa 255	Pro	
Lys	Glu	Ile	Val 260	Leu	Met	Leu	Суз	Gln 265	Ala	Phe	Gly	Ile	Xaa 270	Tyr	Pro	
Ser	Phe	His 275	Ser	Phe	Ile	Leu	Ile 280	Trp	Gly	Asn	Lys	Thr 285	Leu	Lys	Gln	
Thr	Phe 290	Leu	Ser	Val	Leu	Trp 295	Gln	Val	Thr	Cys	Trp 300	Ala	Lys	Gly	Gln	
Asn 305	Gln	Ser	Thr	Pro												
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			100					105					110			
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att Ile	ctg Leu 130	gtg Val	ata Ile	ctg Leu	ttg Leu	ggg Gly 135	act Thr	ttg Leu	ata Ile	ttt Phe	ttg Leu 140	gtt Val	tgt Cys	cat His	ctt Leu	432
ctt Leu 145	gtg Val	gca Ala	aac Asn	atg Met	gat Asp 150	gag Glu	agt Ser	atg Met	tgg Trp	gca Ala 155	gaa Glu	gaa Glu	tat Tyr	gaa Glu	gga Gly 160	480
aac Asn	atg Met	act Thr	ej A aaa	aag Lys 165	atg Met	aaa Lys	ttg Leu	agg Arg	aat Asn 170	aca Thr	gta Val	cat His	ctt Leu	tca Ser 175	tat Tyr	528
ttg Leu	act Thr	gta Val	act Thr 180	acc Thr	cta Leu	tgg Trp	agc Ser	ttc Phe 185	ata Ile	ccc Pro	ttt Phe	act Thr	ctg Leu 190	tcc Ser	ctg Leu	576
ata Ile	tct Ser	ttt Phe 195	ctg Leu	atg Met	cta Leu	atc Ile	tgt Cys 200	tct Ser	ctg Leu	tat Tyr	aaa Lys	cat His 205	ctc Leu	aag Lys	aag Lys	624
atg Met	cag Gln 210	ctc Leu	cat His	gga Gly	gaa Glu	ggå Gly 215	tcg Ser	caa Gln	gat Asp	ctc Leu	agc Ser 220	acc Thr	aag Lys	gtc Val	cac His	672
ata Ile 225	aaa Lys	gct Ala	ttg Leu	caa Gln	act Thr 230	ctg Leu	atc Ile	tcc Ser	ttc Phe	ctc Leu 235	ttg Leu	tta Leu	tgt Cys	gcc Ala	att Ile 240	720
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aat Asn	gac Asp	cca Pro	gtt Val 260	gtc Val	atg Met	gtt Val	agc Ser	aag Lys 265	gct Ala	gtt Val	gga Gly	aac Asn	ata Ile 270	tat Tyr	ctt Leu	816
gca Ala	ttc Phe	gac Asp 275	tca Ser	ttc Phe	atc Ile	cta Leu	att Ile 280	tgg Trp	aga Arg	acc Thr	aag Lys	aag Lys 285	cta Leu	aaa Lys	cac His	864
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Met Ile Thr Phe Leu Tyr Ile Phe Phe Ser Ile Leu Ile Met Val Leu 1 5 10 15

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Phe	Val	Leu	Gly 20	/ Asn	. Phe	Ala	Asn	Gly 25	Phe	Ile	Ala	Leu	Val	. Asn	Phe
Ile	Asp	Trp 35	Val	Lys	Arg	Lys	Lys 40	Ile	Ser	Ser	Ala	Asp 45	Gln	lle	Leu
Thr	Ala 50	Leu	Ala	Val	Ser	Arg 55	Ile	Gly	Leu	Leu	Trp 60	Ala	Leu	Leu	Leu
Asn 65	Trp	Tyr	Leu	Thr	Val 70	Leu	Asn	Pro	Ala	Phe 75	Tyr	Ser	Val	Glu	Leu 80
Arg	Ile	Thr	Ser	Tyr 85	Asn	Ala	Trp	Val	Val 90	Thr	Asn	His	Phe	Ser 95	Met
Trp	Leu	Ala	Ala 100	Asn	Leu	Ser	Ile	Phe 105	Tyr	Leu	Leu	Lys	Ile 110	Ala	Asn
Phe	Ser	Asn 115	Leu	Leu	Phe	Leu	His 120	Leu	rys	Arg	Arg	Val 125	Arg	Ser	Val
Ile	Leu 130	Val	Ile	Leu	Leu	Gly 135	Thr	Leu	Ile	Phe	Leu 140	Val	Cys	His	Leu
Leu 145	Val	Ala	Asn	Met	Asp 150	Glu	Ser	Met	Trp	Ala 155	Glu	Glu	Tyr	Glu	Gly 160
Asn	Met	Thr	Gly	Lys 165	Met	Lys	Leu	Arg	Asn 170	Thr	Val	His	Leu	Ser 175	Tyr
Leu	Thr	Val	Thr 180	Thr	Leu	Trp	Ser	Phe 185	Ile	Pro	Phe	Thr	Leu 190	Ser	Leu
Ile	Ser	Phe 195	Leu	Met	Leu	Ile	Cys 200	Ser	Leu	Tyr	Lys	His 205	Leu	Lys	Lys
Met	Gln 210	Leu	His	Gly	Glu	Gly 215	Ser	Gln	Asp	Leu	Ser 220	Thr	Lys	Val	His
Ile : 225	Lys	Ala	Leu	Gln	Thr 230	Leu	Ile	Ser	Phe	Leu 235	Leu	Leu	Cys	Ala	Ile 240
Phe 1	Phe	Leu	Phe	Leu 245	Ile	Val	Ser	Val	Trp 250	Ser	Pro	Arg	Arg	Leu 255	Arg

Asn Asp Pro Val Val Met Val Ser Lys Ala Val Gly Asn Ile Tyr Leu 265

Ala Phe Asp Ser Phe Ile Leu Ile Trp Arg Thr Lys Lys Leu Lys His 280

Thr Phe Leu Leu Ile Leu Cys Gln Ile Arg Cys 295

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432

Val	Phe 130	Phe	Trp	Leu	Lys	His 135	Lys	Leu	Ser	Gly	Trp	Leu	Pro	Trp	Met		
145					150	beu	ser	ser	Pne	155	Thr	Ile	Leu	Phe	ttc Phe 160	4	80
	-			165		+3+	GIII	ASII	171 170	ьеи	Arg	Asn	His	Leu 175	caa Gln	5	28
	•		180		ggc	rsp	ser	185	Arg	Ser	Tyr	Cys	Glu 190	Lys	Phe	5	76
_		195			aaa Lys	naa	200	III	Trp	Tnr	Met	Pro 205	Thr	Ala	Val	6	24
	210		-20		att Ile	215	пец	тте	Thr	Ser	Leu 220	Gly	Arg	His	Arg	6	72
225	-			200	aca Thr 230	****	per	стХ	Pne	Arg 235	GLu	Pro	Ser	Val	Gln 240	7:	20
			-10	245	ctg Leu	пец	ALG	ьеи	250	ser	Phe	Ala	Met	Leu 255	Phe	76	68
atc Ile	tca Ser	tat Tyr	ttc Phe 260	ctg Leu	tca Ser	ctg Leu	gtg Val	ttc Phe 265	agt Ser	gct Ala	gca Ala	ggt Gly	att Ile 270	ttt Phe	cca Pro	81	16
		275		_,,		110	280	Trp	GIU	Ser	Val	Ile 285	Tyr	Leu	Суз	86	54
gca Ala	gca Ala 290	gtt Val	cac His	ccc Pro	7.T.C	att Ile 295	теп	ctc Leu	ttc Phe	agc Ser	aac Asn 300	tgc Cys	agg Arg	ctg Leu	aga Arg	91	.2
gct Ala 305	gtg Val ;	ctg Leu	aag Lys	agt Ser	cgy Arg 310	cgt Arg	tcc Ser	tca Ser	agg Arg	tgt Cys 315	ej aaa	aca Thr	cct Pro	tga		95	57
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<220: <221: <222: <223:	> m > (199)	featı (19	99)	locat	tion	199	sta	nds	for '	M≏+	o= :	T o				
<400>										I	,	OT.	ueu.				

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1 5 10 15

Ala Ile Ile Leu Val Thr Ile Leu Leu Leu Leu Arg Leu Val Ala Ile 20 25 30

Ala Gly Asn Gly Phe Ile Thr Ala Ala Leu Gly Val Glu Trp Val Leu 35 40 45

Arg Arg Met Leu Leu Pro Cys Asp Lys Leu Leu Val Ser Leu Gly Ala 50 55 60

Ser Arg Phe Cys Leu Gln Ser Val Val Met Gly Lys Thr Ile Tyr Val 65 70 75 80

Phe Leu His Pro Met Ala Phe Pro Tyr Asn Pro Val Leu Gln Phe Leu 85 90 95

Ala Phe Gln Trp Asp Phe Leu Asn Ala Ala Thr Leu Trp Ser Ser Thr 100 105 110

Trp Leu Ser Val Phe Tyr Cys Val Lys Ile Ala Thr Phe Thr His Pro 115 120 125

Val Phe Phe Trp Leu Lys His Lys Leu Ser Gly Trp Leu Pro Trp Met 130 135 140

Leu Phe Ser Ser Val Gly Leu Ser Ser Phe Thr Thr Ile Leu Phe Phe 145 150 155 160

Ile Gly Asn His Arg Met Tyr Gln Asn Tyr Leu Arg Asn His Leu Gln 165 170 175

Pro Trp Asn Val Thr Gly Asp Ser Ile Arg Ser Tyr Cys Glu Lys Phe 180 ' 185 190

Tyr Leu Phe Pro Leu Lys Xaa Ile Thr Trp Thr Met Pro Thr Ala Val 195 200 205

Phe Phe Ile Cys Met Ile Leu Leu Ile Thr Ser Leu Gly Arg His Arg 210 215 220

Lys Lys Ala Leu Leu Thr Thr Ser Gly Phe Arg Glu Pro Ser Val Gln 225 235 240

Ala His Ile Lys Ala Leu Leu Ala Leu Leu Ser Phe Ala Met Leu Phe 245 250 255

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Ile	. Ser	Tyr	Phe 260	Leu	Ser	Leu	Val	Phe 265	Ser	Ala	Ala	Gly	Ile 270		Pro	
Pro	Lev	Asp 275	Phe	Lys	Phe	Trp	Val 280	Trp	Glu	Ser	Val	Ile 285	Tyr	Leu	Cys	
Ala	Ala 290	Val	His	Pro	Ile	Ile 295	Leu	Leu	Phe	Ser	Asn 300	Cys	Arg	Leu	Arg	
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ttt Phe	ctt Leu	ctt Leu	ggg Gly 20	att Ile	ttc Phe	aca Thr	aat Asn	ggc Gly 25	atc Ile	att Ile	gtg Val	gtg Val	gtg Val 30	aat Asn	ggc Gly	96
att Ile	gac Asp	ttg Leu 35	atc Ile	aag Lys	cac His	aga Arg	aaa Lys 40	atg Met	gct Ala	ccg Pro	ctg Leu	gat Asp 45	ctc Leu	ctt Leu	ctt Leu	144
tct Ser	tgt Cys 50	ctg Leu	gca Ala	gtt Val	tct Ser	aga Arg 55	att Ile	ttt Phe	ctg Leu	cag Gln	ttg Leu 60	ttc Phe	atc Ile	ttc Phe	tac Tyr	192
gtt Val 65	aat Asn	gtg Val	att Ile	gtt Val	atc Ile 70	ttc Phe	ttc Phe	ata Ile	gaa Glu	ttc Phe 75	atc Ile	atg Met	tgt Cys	tct Ser	gcg Ala 80	240
aat Asn	tgt Cys	gca Ala	att Ile	ctc Leu	tta Leu	ttt Phe	ata Ile	aat Asn	gaa Glu	ttg Leu	gaa Glu	ctt Leu	tgg Trp	ctt Leu	gcc Ala	288

		04/4

				85					90					95		
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cca Pro	ctc Leu	ttc Phe 115	atc Ile	tgg Trp	ttg Leu	aag Lys	atg Met 120	agg Arg	ata Ile	tcc Ser	aag Lys	ctg Leu 125	gtc Val	cca Pro	tgg Trp	384
atg Met	atc Ile 130	ctg Leu	Gly ggg	tct Ser	ctg Leu	cta Leu 135	tat Tyr	gta Val	tct Ser	atg Met	att Ile 140	tgt Cys	gtt Val	ttc Phe	cat His	432
145	пуз	ıyr	gca Ala	GТĀ	150	Met	Val	Pro	Tyr	Phe 155	Leu	Arg	Lys	Phe	Phe 160	480
DCI	GIII	ASII	gcc Ala	165	тте	GIN	гу	GLu	170	Thr	Leu	Ala	Ile	Gln 175	Ile	528
riie	ser	rne	gtt Val 180	Ата	GIU	Phe	Ser	Val 185	Pro	Leu	Leu	Ile	Phe 190	Leu	Phe	576
1124	vai	195	ctc Leu	пеп	TTE	Pne	200	Leu	СТĀ	Arg	His	Thr 205	Arg	Gln	Met	624
ALG	210	Inr	gtg Val	Ala	GIY	Ser 215	Arg	Val	Pro	Gly	Arg 220	Gly	Ala	Pro	Ile	672
225	nra	теп	ctg Leu	ser	230	Leu	Ser	Phe	Leu	Ile 235	Leu	Tyr	Phe	Ser	His 240	720
Cys	мес	TTE	aaa Lys	245	Phe	Leu	Ser	Ser	Leu 250	Lys	Phe	His	Ile	Arg 255	Arg	768
rne	116	rne	ctg Leu 260	Pne	Pne	IIe	Leu	Val 265	Ile	Gly	Ile	Tyr	Pro 270	Ser	Gly	816
******	Der	275	atc Ile	neu	тте	теп	280	Asn	Pro	Lys	Leu	aaa Lys 285	caa Gln	aat Asn	gca Ala	864
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Phe	Leu	Leu	1 Gly 20	'Ile	Phe	Thr	Asn	Gly 25	, Ile	: Ile	Val	Val	Val 30	Asn	Gly
Ile	Asp	Leu 35	ı Ile	Lys	His	Arg	Lys 40	Met	Ala	Pro	Leu	Asp 45	Leu	Leu	Leu
Ser	Cys 50	Leu	ı Ala	Val	. Ser	Arg 55	, Ile	Phe	Leu	Gln	Leu 60	Phe	Ile	Phe	Tyr
Val 65	Asn	Val	Ile	Val	Ile 70	Phe	Phe	Ile	Glu	Phe	Ile	Met	Cys	Ser	Ala 80
Asn	Cys	Ala	Ile	Leu 85	Leu	Phe	Ile	Asn	Glu 90	Leu	Glu	Leu	Trp	Leu 95	Ala
Thr	Trp	Leu	Gly 100	Val	Phe	Туг	Cys	Ala 105	Lys	Val	Ala	Ser	Val 110	Arg	His
Pro	Leu	Phe 115	Ile	Trp	Leu	Lys	Met 120	Arg	Ile	Ser	Lys	Leu 125	Val	Pro	Trp
Met	Ile 130	Leu	Gly	Ser	Leu	Leu 135	Tyr	Val	Ser	Met	Ile 140	Суз	Val	Phe	His
Ser 145	Lys	Tyr	Ala	Gly	Phe 150	Met	Val	Pro	Tyr	Phe 155	Leu	Arg	Lys	Phe	Phe 160
Ser	Gln	Asn	Ala	Thr 165	Ile	Gln	Lys	Glu	Asp 170	Thr	Leu	Ala	Ile	Gln 175	Ile
Phe	Ser	Phe	Val 180	Ala	Glu	Phe	Ser	Val 185	Pro	Leu	Leu	Ile	Phe 190	Leu	Phe
Ala	Val	Leu 195	Leu	Leu	Ile	Phe	Ser 200	Leu	Gly	Arg	His	Thr 205	Arg	Gln	Met
Arg	Asn 210	Thr	Val	Ala	Gly	Ser 215	Arg	Val	Pro	Gly	Arg 220	Gly	Ala	Pro	Ile
Ser . 225	Ala	Leu	Leu	Ser	Ile 230	Leu	Ser	Phe	Leu	Ile 235	Leu	Tyr	Phe	Ser	His 240

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Cys Met Ile Lys Val Phe Leu Ser Ser Leu Lys Phe His Ile Arg Arg 245 250 Phe Ile Phe Leu Phe Phe Ile Leu Val Ile Gly Ile Tyr Pro Ser Gly 260 265 His Ser Leu Ile Leu Gly Asn Pro Lys Leu Lys Gln Asn Ala 280 Lys Lys Phe Leu Leu His Ser Lys Cys Cys Gln 290 295 <210> 49 <211> 900 <212> DNA <213> homo sapiens <220> <221> CDS <222> (1)..(900) <220> <221> variation <222> (332)..(332) <223> SNP <220> <221> variation <222> (616)..(616) <223> SNP <400> 49 atg cta gag tct cac ctc att atc tat ttt ctt ctt gca gtg ata caa Met Leu Glu Ser His Leu Ile Ile Tyr Phe Leu Leu Ala Val Ile Gln 48 ttt ctt ctt ggg att ttc aca aat ggc atc att gtg gtg gtg aat ggc Phe Leu Leu Gly Ile Phe Thr Asn Gly Ile Ile Val Val Asn Gly 96 20 att gac ttg atc aag cac aga aaa atg gct ccg ctg gat ctc ctt ctt Ile Asp Leu Ile Lys His Arg Lys Met Ala Pro Leu Asp Leu Leu 144 35 40 tct tgt ctg gca gtt tct aga att ttt ctg cag ttg ttc atc ttc tac Ser Cys Leu Ala Val Ser Arg Ile Phe Leu Gln Leu Phe Ile Phe Tyr 192 50 55 gtt aat gtg att gtt atc ttc ttc ata gaa ttc atc atg tgt tct gcg Val Asn Val Ile Val Ile Phe Phe Ile Glu Phe Ile Met Cys Ser Ala 240 65 70 aat tgt gca att ctc tta ttt ata aat gaa ttg gaa ctt tgg ctt gcc Asn Cys Ala Ile Leu Leu Phe Ile Asn Glu Leu Glu Leu Trp Leu Ala 288 85 90

aca Thr	tgg Trp	cto Leu	ggc Gly 100	•	ttc Phe	tat Tyr	tgt Cys	gcc Ala 105	гÀз	gtt Val	gcc Ala	agc Ser	gtc Val 110	Arg	cac His	336
cca Pro	ctc Leu	ttc Phe 115		tgg Trp	ttg Leu	aag Lys	atg Met 120	Arg	ata Ile	tcc Ser	aag Lys	ctg Leu 125	gtc Val	cca Pro	tgg Trp	384
atg Met	atc Ile 130	ctg Leu	GJA aaa	tct Ser	ctg Leu	cta Leu 135	tat Tyr	gta Val	tct Ser	atg Met	att Ile 140	tgt Cys	gtt Val	ttc Phe	cat His	432
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			180	7114	GIU	rne	ser	185	Pro	Leu	Leu	atc Ile	Phe 190	Leu	Phe	576
		195				1116	200	ъец	стА	Arg	His	acc Thr 205	Trp	Gln	Met	624
aga Arg	aac Asn 210	aca Thr	gtg Val	gcc Ala	ggc Gly	agc Ser 215	agg Arg	gtt Val	cct Pro	ggc Gly	agg Arg 220	ggt Gly	gca Ala	ccc Pro	atc Ile	672
agc Ser 225	gcg Ala	ttg Leu	ctg Leu	tct Ser	atc Ile 230	ctg Leu	tcc Ser	ttc Phe	ctg Leu	atc Ile 235	ctc Leu	tac Tyr	ttc Phe	tcc Ser	cac His 240	720
tgc Cys	atg Met	ata Ile	aaa Lys	gtt Val 245	ttt Phe	ctc Leu	tct Ser	tct Ser	cta Leu 250	aag Lys	ttt Phe	cac His	Ile	aga Arg 255	agg Arg	768
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cac His		ctc Leu 275	atc Ile	tta Leu	att Ile	Deu	gga Gly 280	aat Asn	cct Pro	aaa Lys	ttg Leu	aaa Lys 285	caa Gln	aat Asn	gca Ala	864
aaa Lys	aag Lys 290	ttc Phe	ctc Leu	ctc Leu	cac His	agt Ser 295	aag Lys	tgc Cys	tgt Cys	cag Gln	tga					900
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Ile Asp Leu Ile Lys His Arg Lys Met Ala Pro Leu Asp Leu Leu 35 40 45

Ser Cys Leu Ala Val Ser Arg Ile Phe Leu Gln Leu Phe Ile Phe Tyr 50 55 60

Val Asn Val Ile Val Ile Phe Phe Ile Glu Phe Ile Met Cys Ser Ala 70 75 80

Asn Cys Ala Ile Leu Leu Phe Ile Asn Glu Leu Glu Leu Trp Leu Ala 85 90 95

Thr Trp Leu Gly Val Phe Tyr Cys Ala Lys Val Ala Ser Val Arg His 100 105 110

Pro Leu Phe Ile Trp Leu Lys Met Arg Ile Ser Lys Leu Val Pro Trp 115 120 125

Met Ile Leu Gly Ser Leu Leu Tyr Val Ser Met Ile Cys Val Phe His 130 135 140

Ser Lys Tyr Ala Gly Phe Met Val Pro Tyr Phe Leu Arg Lys Phe Phe 145 150 155 160

Ser Gln Asn Ala Thr Ile Gln Lys Glu Asp Thr Leu Ala Ile Gln·Ile 165 170 175

Ala Val Leu Leu Ile Phe Ser Leu Gly Arg His Thr Trp Gln Met 195 200 205

Arg Asn Thr Val Ala Gly Ser Arg Val Pro Gly Arg Gly Ala Pro Ile 210 215 220

Ser Ala Leu Leu Ser Ile Leu Ser Phe Leu Ile Leu Tyr Phe Ser His 225 230 235 240

Cys Met Ile Lys Val Phe Leu Ser Ser Leu Lys Phe His Ile Arg Arg 245 250 255

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Phe Ile Phe Leu Phe Phe Ile Leu Val Ile Gly Ile Tyr Pro Ser Gly 265 His Ser Leu Ile Leu Gly Asn Pro Lys Leu Lys Gln Asn Ala 280 Lys Lys Phe Leu Leu His Ser Lys Cys Cys Gln <210> 51 <211> 900 <212> DNA <213> homo sapiens <220> <221> CDS <222> (1)..(900) <220> <221> variation <222> (332)..(332) <223> SNP <220> <221> variation <222> (616)..(616) <223> SNP <400> 51 atg cta gag tct cac ctc att atc tat ttt ctt ctt gca gtg ata caa Met Leu Glu Ser His Leu Ile Ile Tyr Phe Leu Leu Ala Val Ile Gln 48 ttt ctt ctt ggg att ttc aca aat ggc atc att gtg gtg gtg aat ggc Phe Leu Leu Gly Ile Phe Thr Asn Gly Ile Ile Val Val Asn Gly 96 20 25 att gac ttg atc aag cac aga aaa atg gct ccg ctg gat ctc ctt ctt Ile Asp Leu Ile Lys His Arg Lys Met Ala Pro Leu Asp Leu Leu 144 35 tct tgt ctg gca gtt tct aga att ttt ctg cag ttg ttc atc ttc tac Ser Cys Leu Ala Val Ser Arg Ile Phe Leu Gln Leu Phe Ile Phe Tyr 192 50 55 gtt aat gtg att gtt atc ttc ttc ata gaa ttc atc atg tgt tct gcg Val Asn Val Ile Val Ile Phe Phe Ile Glu Phe Ile Met Cys Ser Ala 240 aat tgt gca att ctc tta ttt ata aat gaa ttg gaa ctt tgg ctt gcc Asn Cys Ala Ile Leu Leu Phe Ile Asn Glu Leu Glu Leu Trp Leu Ala 288 aca tgg ctc ggc gtt ttc tat tgt gcc aag gtt gcc agc gtc cat cac Thr Trp Leu Gly Val Phe Tyr Cys Ala Lys Val Ala Ser Val His His

336

	90/4

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Cca ctc ttc atc tgg ttg aag atg agg ata tcc aag ctg gtc cca tgg Pro Leu Phe Ile Trp Leu Lys Met Arg Ile Ser Lys Leu Val Pro Trp 125	384
atg atc ctg ggg tct ctg cta tat gta tct atg att tgt gtt ttc cat Met Ile Leu Gly Ser Leu Leu Tyr Val Ser Met Ile Cys Val Phe His 130	432
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Ser Gln Asn Ala Thr Ile Gln Lys Glu Asp Thr Leu Ala Ile Gln Ile 165 175	528
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tgc atg ata aaa gtt ttt ctc tct tct cta aag ttt cac atc aga agg Cys Met Ile Lys Val Phe Leu Ser Ser Leu Lys Phe His Ile Arg Arg 245 250 255	768
ttc atc ttt ctg ttc ttc atc ctt gtg att ggt ata tac cct tct gga Phe Ile Phe Leu Phe Phe Ile Leu Val Ile Gly Ile Tyr Pro Ser Gly 260 265 270	816
Cac tct ctc atc tta att tta gga aat cct aaa ttg aaa caa aat gca His Ser Leu Ile Leu Gly Asn Pro Lys Leu Lys Gln Asn Ala 275 280 285	864
aaa aag ttc ctc ctc cac agt aag tgc tgt cag tga Lys Lys Phe Leu His Ser Lys Cys Cys Gln 290 295	900
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- Ile Asp Leu Ile Lys His Arg Lys Met Ala Pro Leu Asp Leu Leu Asp Leu Leu 45
- Ser Cys Leu Ala Val Ser Arg Ile Phe Leu Gln Leu Phe Ile Phe Tyr 50 55 60
- Val Asn Val Ile Val Ile Phe Phe Ile Glu Phe Ile Met Cys Ser Ala 70 75 80
- Asn Cys Ala Ile Leu Leu Phe Ile Asn Glu Leu Glu Leu Trp Leu Ala 85 90 95
- Thr Trp Leu Gly Val Phe Tyr Cys Ala Lys Val Ala Ser Val His His
 100 105 110
- Pro Leu Phe Ile Trp Leu Lys Met Arg Ile Ser Lys Leu Val Pro Trp 115 120 125
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acc acc Thr Thr 50	ctg Leu	gca Ala	ctc Leu	ttg Leu	agg Arg 55	atc Ile	att Ile	ctg Leu	ctg Leu	tgt Cys 60	att Ile	atc Ile	ttg Leu	act Thr	192
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acc Thr 225	act Thr	gag Glu	gcc Ala	cac His	aag Lys 230	agg Arg	gcc Ala	atc Ile	aga Arg	atc Ile 235	atc Ile	ctt Leu	tcc Ser	ttc Phe	ttc Phe 240	720
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Ser	: Ser	Trp 35	Phe	. Lys	Thr	Lys	Arg 40	Met	: Ser	Leu	Ser	Asp 45	Phe	: Ile	: Ile
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Ile	Trp	Leu	Ala 100	Thr	Суз	Leu	Gly	Val 105	Leu	Tyr	Cys	Leu	Lys 110		Ala
Ser	Phe	S'er 115	His	Pro	Thr	Phe	Leu 120	Trp	Leu	Lys	Trp	Arg 125	Val	Ser	Arg
Val	Met 130	Val	Trp	Met	Leu	Leu 135	Gly	Ala	Leu	Leu	Leu 140	Ser	Cys	Gly	Ser
Thr 145	Ala	Ser	Leu	Ile	Asn 150	Glu	Phe	Lys	Leu	Tyr 155	Ser	Val	Phe	Arg	Gly 160
Ile	Glu	Ala	Thr	Arg 165	Asn	Val	Thr	Glu	His 170	Phe	Arg	ГÀ2	Lys	Arg 175	Ser
Glu	Tyr	Tyr	Leu 180	Ile	His	Val	Leu	Gly 185	Thr	Leu	Trp	Туг	Leu 190	Pro	Pro
Leu	Ile	Val 195	Ser	Leu	Ala	Ser	Tyr 200	Ser	Leu	Leu	Ile	Phe 205	Ser	Leu	Gly
Arg	His 210	Thr	Arg	Gln	Met	Leu 215	Gln	Asn	Gly	Thr	Ser 220	Ser	Arg	Asp	Pro
Thr 225	Thr	Glu	Ala	His	Lys 230	Arg	Ala	Ile	Arg	Ile 235	Ile	Leu	Ser	Phe	Phe 240
Phe	Leu	Phe	Leu	Leu 245	Tyr	Phe	Leu	Ala	Phe 250	Leu	Ile	Ala	Ser	Phe 255	Gly
Asn	Phe	Leu	Pro 260	Lys	Thr	Lys	Met	Ala 265	Lys	Met	Ile	Gly	Glu 270	Val	Met

Thr Met Phe Tyr Pro Ala Gly His Ser Phe Ile Leu Ile Leu Gly Asn

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acc acc ctg gca ctc ttg agg atc att ctg ctg tgt att atc ttg act Thr Thr Leu Ala Leu Leu Arg Ile Ile Leu Leu Cys Ile Ile Leu Thr 192

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Thr Thr Leu Ala Leu Leu Arg Ile Ile Leu Leu Cys Ile Ile Leu Thr 50 55 60

Asp Ser Phe Leu Ile Glu Phe Ser Pro Asn Thr His Asp Ser Gly Ile 70 75 80

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Ile Trp Leu Ala Thr Cys Leu Gly Val Leu Tyr Cys Leu Lys Ile Ala 100 105 110

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Glu Tyr Tyr Leu Ile His Val Leu Gly Thr Leu Trp Tyr Leu Pro Pro 180 185 190

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Arg His Thr Arg Gln Met Leu Gln Asn Gly Thr Ser Ser Arg Asp Pro 210 215 220

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Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Phe Leu Val 50 55 60

Asn 65	Thr	Ile	Tyr	Phe	Val 70	Ser	Ser	Asn	Thr	Glu 75	Arg	Ser	Val	Tyr	Leu 80
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- Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Leu 85 90 95
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- Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn 180 185 190
- Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln
 195 200 205
- Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala 210 225 220
- His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile 225 230 235 240
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Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Phe Leu Val 50 55 60

Asn Thr Ile Tyr Phe Val Ser Ser Asn Thr Glu Arg Ser Val Tyr Leu 70 75 80

Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Val 85 90 95

Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn 100 105 110

Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys 115

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Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val 145 150 155 160

Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Ser Glu Gly Ile Leu Ser 165 170 175

Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn 180 185 190

Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln
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Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala 210 215 220

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His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile

Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly

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Phe															

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Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Ser Glu Gly Ile Leu Ser 165 170 175

Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn 180 185 190

Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln 195 200 205

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- Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala 210 215 220
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cat g His V 225					230			,	* <u>Y</u>	2	35	Jeu	тте	Le	u T	'yr	Ile 240		720
cca t Pro T	at t yr S	ca g er V	ytt q Val A	gct a Ala : 245	acc Thr	ctg Leu	gtc Val	cag Gln	ta Ty 25		tc c eu F	ec Pro	ttt Phe	ta Ty	r A	ca la 55			768
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tct co	ca g	ga c	at t	ct c	jtt -	ctc	att	att	at	C ac	ca c	at d	ect			tg a	aaa		864

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Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Phe Leu Val 55

Asn Thr Ile Tyr Phe Val Ser Ser Asn Met Glu Arg Ser Val Tyr Leu 70 75

Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Leu 90

Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn 100 105

Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys 115 120

Ile Pro Arg Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr

Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val

Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Asn Glu Gly Ile Leu Ser 170

Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn 180 185

Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln 200 205 Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala 215 220 His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile 230 235 Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly 245 250 Met Asp Met Gly Thr Lys Ser Ile Cys Leu Ile Phe Ala Thr Leu Tyr 260 265 Ser Pro Gly His Ser Val Leu Ile Ile Ile Thr His Pro Lys Leu Lys 280 Thr Thr Ala Lys Lys Ile Leu Cys Phe Lys Lys 290 <210> 69 <211> 900 <212> DNA <213> homo sapiens <220> <221> CDS <222> (1)..(900) <220> <221> variation <222> (8)..(8) <223> SNP <220> <221> variation <222> (20)..(20) <223> SNP <220> <221> variation <222> (186)..(186) <223> SNP <220>

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119/447

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πp	rne	gtg Val	100	ьeu	Ļеu	Asn	Ile	Leu 105	Tyr	Суз	Val	Lys	Ile 110	Thr	Asn	336
rne	GIII	cac His 115	ser	vaı	rne	Leu	120	Leu	Lys	Arg	Asn	Ile 125	Ser	Pro	Lys	384
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Leu	vaı	gtt Val	180	Leu	Val	Leu	Ser	Ser 185	Ser	Leu	Gln	Phe	Ile 190	Ile	Asn	576
gtg Val	act Thr	tct Ser 195	gct Ala	tcc Ser	ttg Leu	cta Leu	ata Ile 200	cac His	tcc Ser	ttg Leu	agg Arg	aga Arg 205	cat His	ata Ile	cag Gln	624

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gtg Val	act Thr	tct Ser 195	gct Ala	tcc Ser	ttg Leu	cta Leu	ata Ile 200	cac His	tcc Ser	ttg Leu	agg Arg	aga Arg 205	cat His	ata Ile	cag Gln	624

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	210)			t gc n Al	215	5	.y - 11	.e 11	p As	n Pr 22	:0 :0	n Tl	nr G	lu	Ala		672
225					g aad t Lys 230)		· va	- 1y	23	е ње 5	u II	e Le	eu T	yr	Ile 240		720
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		275			gtt Val		280	, 116	2 TT6	a Tui	HIS	28!	э Гу	a ci s Le	tg eu	aaa Lys	8	364
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Lys T	hr i	Trp 35	Val	Lys	Ser	His	Arg 40	Ile	Ser	Ser	Ser	Asp 45	Arg	Ile	e I	eu		
Phe S	er 1	Leu	Gly	Ile	Thr	Arg 55	Phe	Leu	Met	Leu	Gly 60	Leu	Phe	Let	ı V	al		
Asn T 65	hr]	[le	Tyr	Phe	Val 70	Ser :	Ser	Asn	Thr	Glu 75	Arg	Ser	Val	Туг	8 - L			
Ser A	la P	Phe :	Phe	Val 85	Leu (Cys I	Phe i	Met	Phe 90	Leu	Asp	Ser	Ser	Ser 95	· L	eu		
.Trp Pl	he V	al 1	Thr :	Leu	Leu 1	Asn 1	lle i	Leu ' 105	Tyr	Cys	Val	Lys	Ile 110	Thr	As	sn		

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Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys 115 120 125

Ile Pro Arg Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr 130 135 140

Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val 155

Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Asn Glu Gly Ile Leu Ser 165 170

Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn 180 185

Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln 195 200

Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala 210 215

His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile 225 230

Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly 245

Met Asp Met Gly Thr Lys Ser Ile Cys Leu Ile Phe Ala Thr Leu Tyr 260 265

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	124/44

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Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Phe Leu Val 50 55 60

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Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Asn Glu Gly Ile Leu Ser 165 170 175

Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn 180 185 190

Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln 195 200 205

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Met Asp Met Gly Thr Lys Ser Ile Cys Leu Ile Phe Ala Thr Leu Tyr 260 265

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Pro Ala Tyr Leu Trp Leu Lys Gln Arg Ala Tyr Asn Leu Ser Leu Trp 115

Cys Leu Leu Gly Tyr Phe Ile Ile Asn Leu Leu Leu Thr Val Gln Ile

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Gly Cys Phe Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe 230 235

Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile 245 250

Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu 260

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tgc Cys	ctt Leu 130	ctg Leu	ggc Gly	tac Tyr	ttt Phe	ata Ile 135	atc Ile	aat Asn	ttg Leu	tta Leu	ctt Leu 140	aca Thr	gtc Val	caa Gln	att Ile		432
ggc Gly 145	tta Leu	aca Thr	ttc Phe	tat Tyr	cat His 150	cct Pro	ccc Pro	caa Gln	gga Gly	aac Asn 155	agc Ser	agc Ser	att Ile	cgg Arg	tat Tyr 160		480
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gtc Val	tct Ser	ttg Leu 195	tat Tyr	aca Thr	cac His	cac His	aag Lys 200	aag Lys	atg Met	aag Lys	gtc Val	cat His 205	tca Ser	gct Ala	ggt Gly	(624
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Cys Leu Leu Gly Tyr Phe Ile Ile Asn Leu Leu Leu Thr Val Gln Ile 135

Gly Leu Thr Phe Tyr His Pro Pro Gln Gly Asn Ser Ser Ile Arg Tyr 155 160

Pro Phe Glu Ser Trp Gln Tyr Leu Tyr Ala Phe Gln Leu Asn Ser Gly 165

Ser Tyr Leu Pro Leu Val Val Phe Leu Val Ser Ser Gly Met Leu Ile 185

Val Ser Leu Tyr Thr His His Lys Lys Met Lys Val His Ser Ala Gly 200

Arg Arg Asp Val Gln Ala Lys Ala His Ile Thr Ala Leu Lys Ser Leu 215

Gly Cys Phe Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe

Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile 245

Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu 260

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Lys Thr Val Cys Ala Arg Arg Cys Trp Gly Pro 290 295

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ecg ge Pro Al	c tac a Tyr 115	ttg Leu	tgg Trp	ctg Leu	aag Lys	cag Gln 120	agg Arg	gcc Ala	tat Tyr	aac Asn	ctg Leu 125	agt Ser	ctc Leu	tgg Trp	384
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gtc tct Val Ser	ttg t Leu T 195	at aca yr Thr	cac His	cac His	aag Lys 200	aag Lys	atg Met	aag Lys	gtc Val	cat His 205	tca Ser	gct Ala	ggt Gly	624
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ggc tgc Gly Cys 225	ttc c Phe L	tc tta eu Leu	ctt Leu 230	cac His	ctg Leu	gtt Val	tat Tyr	atc Ile 235	atg Met	gcc Ala	agc Ser	ccc Pro	ttc Phe 240	720
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tgg gag : Trp Glu :		tc atg eu Met 60	gca Ala	gcc Ala	tat Tyr	cct Pro 265	tct Ser	ctt Leu	cat His	tct Ser	ctc Leu 270	ata Ile	ttg Leu	816
atc atg (Ile Met (ggg at Gly I1 275	tt cct le Pro	agg Arg	vат	aag Lys 280	cag Gln	act Thr	tgt Cys	cag Gln	aag Lys 285	atc Ile	ctg Leu	tgg Trp	864
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Arg Glu Trp Ile Arg Lys Phe Asn Trp Ser Ser Tyr Asn Leu Ile Ile 35 40 45

Leu	Gly	Leu	Ala	Gly	Cys	Arg	Phe	Leu	Leu	Gln	Trp	Leu	Ile	Ile	Leu
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- Leu Ser Ile Phe Trp Val Leu Val Ser Gln Ala Ser Leu Trp Phe Ala 85 90 95
- Thr Phe Leu Ser Val Phe Tyr Cys Lys Lys Ile Thr Thr Phe Asp Arg
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- Cys Leu Leu Gly Tyr Phe Ile Ile Asn Leu Leu Leu Thr Val Gln Ile 130 135 140
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- Ser Tyr Leu Pro Leu Val Val Phe Leu Val Ser Ser Gly Met Leu Ile 180 185 190
- Val Ser Leu Tyr Thr His His Lys Lys Met Lys Val His Ser Ala Gly 195 200 205
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acc Thr	ttc Phe	ctc Leu	agt Ser 100	gtc Val	ttc Phe	tat Tyr	tgc Cys	aag Lys 105	aag Lys	atc Ile	acg Thr	acc Thr	ttc Phe 110	gat Asp	cgc Arg	336
ctg Leu	gcc Ala	tac Tyr 115	ttg Leu	tgg Trp	ctg Leu	Lys	cag Gln .120	agg Arg	gcc Ala	tat Tyr	aac Asn	ctg Leu 125	agt Ser	ctc Leu	tgg Trp	384
tgc Cys	ctt Leu 130	ctg Leu	ggc ggc	tac Tyr	ttt Phe	ata Ile 135	atc Ile	aat Asn	ttg Leu	tta Leu	ctt Leu 140	aca Thr	gtc Val	caa Gln	att Ile	432
ggc Gly 145	tta Leu	aca Thr	ttc Phe	tat Tyr	cat His 150	cct Pro	ccc Pro	caa Gln	gga Gly	aac Asn 155	agc Ser	agc Ser	att Ile	cgg Arg	tat Tyr 160	480
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gtc Val	tct Ser	ttg Leu 195	tat Tyr	aca Thr	cac His	cac His	aag Lys 200	aag Lys	atg Met	aag Lys	gtc Val	cat His 205	tca Ser	gct Ala	ggt Gly	624
agg Arg	agg Arg 210	gat Asp	gtc Val	cgg Arg	gcc Ala	aag Lys 215	gct Ala	cac His	atc Ile	act Thr	gcg Ala 220	ctg Leu	aag Lys	tcc Ser	ttg Leu	672
ggc Gly 225	tgc Cys	ttc Phe	ctc Leu	tta Leu	ctt Leu 230	cac His	ctg Leu	gtt Val	tat Tyr	atc Ile 235	atg Met	gcc Ala	agc Ser	ccc Pro	ttc Phe 240	720
tcc Ser	atc Ile	acc Thr	tcc Ser	aag Lys 245	act Thr	tat Tyr	cct Pro	cct Pro	gat Asp 250	ctc Leu	acc Thr	agt Ser	gtc Val	ttc Phe 255	atc Ile	768
tgg Trp	gag Glu	aca Thr	ctc Leu 260	atg Met	gca Ala	gcc Ala	tat Tyr	cct Pro 265	tct Ser	ctt Leu	cat His	tct Ser	ctc Leu 270	ata Ile	ttg Leu	816
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Leu Gly Leu Ala Gly Cys Arg Phe Leu Leu Gln Trp Leu Ile Ile Leu 50 60

Asp Leu Ser Leu Phe Pro Leu Phe Gln Ser Ser Arg Trp Leu Arg Tyr 65 70 75 80

Leu Ser Ile Phe Trp Val Leu Val Ser Gln Ala Ser Leu Trp Phe Ala 85 90 95

Thr Phe Leu Ser Val Phe Tyr Cys Lys Lys Ile Thr Thr Phe Asp Arg
100 105 110

Leu Ala Tyr Leu Trp Leu Lys Gln Arg Ala Tyr Asn Leu Ser Leu Trp 115 120 125

Cys Leu Leu Gly Tyr Phe Ile Ile Asn Leu Leu Leu Thr Val Gln Ile 130 135 140

Gly Leu Thr Phe Tyr His Pro Pro Gln Gly Asn Ser Ser Ile Arg Tyr 145 150 155 160

Pro Phe Glu Ser Trp Gln Tyr Leu Tyr Ala Phe Gln Leu Asn Ser Gly 165 170 175

Ser Tyr Leu Pro Leu Val Val Phe Leu Val Ser Ser Gly Met Leu Ile 180 185 190

Val Ser Leu Tyr Thr His His Lys Lys Met Lys Val His Ser Ala Gly 195 200 205

Arg Arg Asp Val Arg Ala Lys Ala His Ile Thr Ala Leu Lys Ser Leu 210 220

Gly Cys Phe Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe

Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile 250

Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu 265

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ttt Phe	Cto	ato 1 Ile	ggt Gly 20	t tta y Lei	a ati ı Ile	gga Gly	a aat / Asi	t gga n Gly 25	a ato	c cto	g gt ı Va	g gto l Vai	c tgo l Tr _l 30	g ag o Se	t ttt r Phe	96
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				85			Val	. per	90	Ата	Ser	Leu	Trp	Phe 95	gcc Ala	288
			100			-,,	د ړه	105	пуг	тте	Thr	Thr	Phe 110	Asp	cgc Arg	336
		115		•		-,0	120	arg	AIA	Tyr	Asn	Leu 125	Ser	Leu	tgg Trp	384
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agt i Ser i			180	_		V C. J.	1116	185	var	ser	Ser	Gly	Met 190	Leu	Ile	576
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agg a Arg A	10	-		5		215	n.a	пта	тте	Thr	A1a 220	Leu	Lys	Ser	Leu	672
ggc t Gly C 225	gc :	ttc Phe	ctc Leu :		ctt Leu 230	cac (His]	ctg Leu	gtt : Val :	TAT.	atc Ile: 235	atg Met	gcc Ala	agc Ser	ccc Pro	ttc Phe 240	720

816

864

900

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Ser Tyr Leu Pro Leu Val Val Phe Leu Val Ser Ser Gly Met Leu Ile 185

Val Ser Leu Tyr Thr His His Lys Lys Met Lys Val His Ser Ala Gly 200

Arg Arg Asp Val Arg Ala Lys Ala His Ile Thr Ala Leu Lys Ser Leu 215

Gly Cys Phe Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe 230

Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile 245 250

Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu 260

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aga gaa Arg Glu	35		9	-70	1110	40	. rrp	ser	ser	Tyr	Asn 45	Leu	Ile	Ile	144
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gac tta Asp Leu 65				70	лец	rue	GIN	ser	Ser 75	Arg	Trp	Leu	Arg	Tyr 80	240
ctt agt Leu Ser			85	V 44.2	шец	val	ser	90 91n	Ala	Ser	Leu	Trp	Phe 95	Ala	288
acc ttc Thr Phe		100			- 7.	Суѕ	105	гда	iTe	Thr	Thr	Phe 110	Asp	Arg	336
ccg gcc Pro Ala	tac Tyr 115	ttg Leu	tgg Trp	ctg Leu	aag Lys	cag Gln 120	agg Arg	gcc Ala	tat Tyr	aac Asn	ctg Leu 125	agt Ser	ctc Leu	tgg Trp	384
tgc ctt Cys Leu 130		,		Line	135	тте	Asn	Leu	Leu	Leu 140	Thr	Val	Gln	Ile	432
ggc tta	aca	ttc	tat	cat	act	ccc	caa	gga	aac	agc	agc	att	cgg	tat	480

									144/44	1 7							
										122					Tyr 160		
				165		- 172	1)eu	ııyı	170	Pne	GID	Leu	Asn	Ser 175		528	
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		ttg Leu 195	_				200	пур	Mec	тÀs	val	His 205	Ser	Ala	Gly	624	
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atc Ile	atg Met	999 Gly 275	att Ile	cct Pro	agg Arg	gtg Val	aag Lys 280	cag Gln	act Thr	tgt Cys	cag Gln	aag Lys 285	atc Ile	ctg Leu	tgg Trp	864	
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Arg Glu Trp Ile Arg Lys Phe Asn Trp Ser Ser Tyr Asn Leu Ile Ile 40

Leu Gly Leu Ala Gly Cys Arg Phe Leu Leu Gln Trp Leu Ile Ile Leu

Asp 65	Ļeu	Ser	Leu	Phe	Pro 70	Leu	Phe	Gln	Ser	Ser 75	Arg	Trp	Leu	Arg	Tyr 80
Leu	Ser	Ile	Phe	Trp 85	Val	Leu	Val	Ser	Gln 90	Ala	Ser	Leu	Trp	Phe 95	Ala
Thr	Phe	Leu	Ser 100	Val	Phe	Tyr	Суз	Lys 105	ГÀЗ	Ile	Thr	Thr	Phe 110	Asp	Arg
Pro	Ala	Tyr 115	Leu	Trp	Leu	Lys	Gln 120	Arg	Ala	Tyr	Asn	Leu 125	Ser	Leu	Trp
Суз	Leu 130	Leu	Gly	Tyr	Phe	Ile 135	Ile	Asn	Leu	Leu	Leu 140	Thr	Val	Gln	Ile
Gly 145	Leu	Thr	Phe	Tyr	His 150	Pro	Pro	Gln	Gly	Asn 155	Ser	Ser	Ile	Arg	Tyr 160
Pro	Phe	Glu	Ser	Trp 165	Gln	Tyr	Leu	Tyr	Ala 170	Phe	Gln	Leu	Asn	Ser 175	Gly
Ser	Tyr	Leu	Pro 180	Leu	Val	Val	Phe	Leu 185	Val	Ser	Ser	Gly	Met 190	Leu	Ile
Val	Ser	Leu 195	Tyr	Thr	His	His	Lys 200	Lys	Met	Lys	Val	His 205	Ser	Ala	Gly
Arg	Arg 210	Asp	Val	Arg	Ala	Lys 215	Ala	His	Ile	Thr	Ala 220	Leu	Lys	Ser	Leu
Gly 225	Cys	Phe	Leu	Leu	Leu 230	His	Leu	Val	Tyr	Ile 235		Ala	Ser	Pro	Phe 240
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ttt ct Phe Le	c atc u Ile	ggt Gly 20	tta Leu	att Ile	gga Gly	aat Asn	gga Gly 25	atc Ile	ctg Leu	gtg Val	gtc Val	tgg Trp 30	agt Ser	ttt Phe	96
aga ga Arg Gl	a tgg u Trp 35	atc Ile	aga Arg	aaa Lys	ttc Phe	aac Asn 40	tgg Trp	tcc Ser	tca Ser	tat Tyr	aac Asn 45	ctc Leu	att Ile	atc Ile	144
ctg ggg Leu Gl	c ctg y Leu	gct Ala	ggc Gly	tgc Cys	cga Arg 55	ttt Phe	ctc Leu	ctg Leu	cag Gln	tgg Trp 60	ctg Leu	atc Ile	att Ile	ttg Leu	192
gac tt: Asp Le: 65	a agc ı Ser	ttg Leu	ttt Phe	cca Pro 70	ctt Leu	ttc Phe	cag Gln	agc Ser	agc Ser 75	cgt Arg	tgg Trp	ctt Leu	tgc Cys	tat Tyr 80	240

				8	5					9	0	WT.C	ı se	г ге	u T	rp	Phe 95	gcc Ala	288
			1(0			•	- 4 -	10	5	yЗ	TTE	: In:	r Tn	r Pi 11	le l0	Asp	cgc Arg	336
		1.1	.5		-			120)	j A.	La	Tyr	ASI	12:	u Se 5	er	Leu	tgg Trp	384
	130)					135		, AGI	י אני	≠u	ьец	ьеі 14(ı Thi)	r Va	1	Gln	att Ile	432
145	c tta / Lei			_	15	0		0	0111	GI	-У	155	Ser	Ser	: Il	е	Arg	Tyr 160	480
	ttt Phe			16	5		- 1 -	204	TÄT	17	0	rne	GIn	Lev	As	n	Ser 175	Gly	528
	tat Tyr		18	0					185	٧a	т,	ser	ser	GLy	Me ⁻	ቲ : 0	Leu	Ile	576
	tct Ser	195	5					200	пуs	rie.	C 1	-y	vaı	нıs 205	Se	r I	Ala	Gly	624
	agg Arg 210					2	15	*****	1112	тт.	e 1	nr	A1a 220	Leu	Lys	3 5	Ser	Leu	672
225	tgc Cys				23)		- 0u	vai	T À I	2	35	Met	Ala	Ser	: E	ro	Phe 240	720
	atc Ile			245	5	_	<i>x</i> – .		110	250) 11	eu	Inr	Ser	Val	. P	he : 55	Ile	768
	gag Glu		260					- y -	265	ser	. T	eu 1	His	Ser	Leu 270	Ι	le 1	Leu	816
	atg Met	275			-		2	280	0111	411T	Ų.	ys c	∍TIJ	aag Lys 285	atc Ile	L	tg t eu 1	gg	864
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Arg Glu Trp Ile Arg Lys Phe Asn Trp Ser Ser Tyr Asn Leu Ile Ile 35

Leu Gly Leu Ala Gly Cys Arg Phe Leu Leu Gln Trp Leu Ile Ile Leu 50 55 60

Asp Leu Ser Leu Phe Pro Leu Phe Gln Ser Ser Arg Trp Leu Cys Tyr 65 70 75 80

Leu Ser Ile Phe Trp Val Leu Val Ser Gln Ala Ser Leu Trp Phe Ala 85 90 95

Thr Phe Leu Ser Val Phe Tyr Cys Lys Lys Ile Thr Thr Phe Asp Arg

Leu Ala Tyr Leu Trp Leu Lys Gln Arg Ala Tyr Asn Leu Ser Leu Trp

Cys Leu Leu Gly Tyr Phe Ile Ile Asn Leu Leu Leu Thr Val Gln Ile 130 135 140

Gly Leu Thr Phe Tyr His Pro Pro Gln Gly Asn Ser Ser Ile Arg Tyr 145 150 155 160

Pro Phe Glu Ser Trp Gln Tyr Leu Tyr Ala Phe Gln Leu Asn Ser Gly 165 170 175

Ser Tyr Leu Pro Leu Val Val Phe Leu Val Ser Ser Gly Met Leu Ile 180 185 190

Val Ser Leu Tyr Thr His His Lys Lys Met Lys Val His Ser Ala Gly 195 200 205

Arg Arg Asp Val Arg Ala Lys Ala His Ile Thr Ala Leu Lys Ser Leu 210 215 220

Gly Cys Phe Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe

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225 230 235 240

Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile 250

Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu 265

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Lys Thr Val Cys Ala Arg Arg Cys Trp Gly Pro 295

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					al G					10						15	•		
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ato Met	g ga : As _l	c tg p Tr 35	ig gt p Va	c aa al Ly	ag aa ys Lj	ag ag /s Ai	gg aa rg Ly 40	,0 1	tt le	gco Ala	tc a Se	c at r Il	t g .e A.	sp	tta Lev	at 1 Il	c ct e Le	ic eu	144
aca Thr	agt Sei 50	t ct Le	g gc u Al	c at a I]	a to Le Se	ec aç er Ai 55	- 9 - 1	t t le C	gt ys	cta Leu	tt: Le:	g tg u Cy 60	s Va	ta al	ata Ile	ct Le	a tt u Le	a	192
gat Asp 65	tgt Cys	tt Ph	t at e Il	a tt e Le	g gt u Va 70		a ta eu Ty	r P	ca ro	gat Asp	gto Val	ta L Ty	t go r Al	cc .a '	act Thr	gg:	t aa y Ly 80	s	240
gaa Glu	atç Met	aga : Ara	a at g Il	c at e I1 85	t ga e As	c tt p Ph	c tt e Ph	c to	rp gg	aca Thr 90	cta Leu	a ace	c aa r As	it d	cat His	tta Lei 95	-		288
atc Ile	tgg Trp	tti Phe	t gc e Ala 10	a ac a Th 0	c tg r Cy	c ct s Le	c ag u Se	c at r []	. e	tac Tyr	tat Tyr	tto Phe	c tt	e 1	aag Sys		a gg	t Y	336
aat Asn	ttc Phe	ttt Phe 115	cade His	c cc s Pr	a cti o Lei	t tt u Ph	c ct e Le 12	4 11	g g	atg Met	aag Lys	tgg Trp	g ag Ar 12	a a g I		gac	age Are	3	384
gtg Val	att Ile 130	tco Ser	tgg Tr	g at	t cta e Lei	a cto 1 Let 13!		g tg Y Cy	c s	gtg Val	gtt Val	cto Leu 140	ı Se	t g r V	rtg 'al	ttt Phe	att Ile	: e	432
agc Ser 145	ctt Leu	cca Pro	gco Ala	act Thi	t gag Glu 150		t tto Lei	g aa 1 As	c (gct Ala	gat Asp 155	ttc Phe	age Are	g t	tt he	tgt Cys	gto Val		480
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act Thr	caa Gln	cat His	gct Ala 180	tct Ser	acc Thr	aaç Lys	r tta Leu	tti Phe	= T	ctc Seu	aac Asn	ctg Leu	gca Ala	T	cg hr 90	ctg Leu	ctc Leu		576
ccc Pro	ttt Phe	tgt Cys 195	gtg Val	tgc Cys	cta Leu	atg Met	tcc Ser 200	E 116	t t	tc he	ctc Leu	ttg Leu	ato Ile 205	Le	tc eu :	tcc Ser	ctg Leu		624
cgg a	aga Arg 210	cat His	atc Ile	agg Arg	cga Arg	atg Met 215	cag Gln	cto	a 1 S	gt d er 1	gcc Ala	aca Thr 220	Gly	to C	gc a /s l	aga Arg	gac Asp		672
ccc a Pro s 225	agc Ser	aca Thr	gaa Glu	gcc Ala	cat His 230	gtg Val	aga Arg	gcc Ala	. c	eu 1	aaa Lys 235	gct Ala	gtc Val	at Il	t t	Ser	ttc Phe 240		720
ctt c Leu I	etc Geu	ctc Leu	ttt Phe	att Ile	gcc Ala	tac Tyr	tat Tyr	ttg Leu	t.	cc t er E	tt Phe	ctc Leu	att Ile	gc Al	c a a I				768

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ata gct cta atc Ile Ala Leu Ile 275	tac ccc tca Tyr Pro Ser	agt cat to Ser His Se 280	ca ttt atc cta a er Phe Ile Leu I 285	ta ctg ggg 864 le Leu Gly
aac aat aaa tta Asn Asn Lys Leu 290	aga cat gca Arg His Ala 295	tct cta aa Ser Leu Ly	ag gtg att tgg a vs Val Ile Trp L 300	aa gta atg 912 ys Val Met
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Met Asp Trp Val	Lys Lys Arg	Lys Ile Al 40	a Ser Ile Asp Lo 45	eu Ile Leu
Thr Ser Leu Ala 50	Ile Ser Arg 55	Ile Cys Le	u Leu Cys Val II 60	.e Leu Leu
Asp Cys Phe Ile 65	Leu Val Leu 70	Tyr Pro As	p Val Tyr Ala Th 75	or Gly Lys 80
Glu Met Arg Ile	Ile Asp Phe :	Phe Trp Th: 90	r Leu Thr Asn Hi	s Leu Ser 95
Ile Trp Phe Ala 100	Thr Cys Leu	Ser Ile Ty: 105	r Tyr Phe Phe Ly 11	
Asn Phe Phe His 115	Pro Leu Phe	Leu Trp Met 120	t Lys Trp Arg II 125	e Asp Arg
Val Ile Ser Trp 130	Ile Leu Leu (135	Gly Cys Va	l Val Leu Ser Va 140	l Phe Ile

Ser Leu Pro Ala Thr Glu Asn Leu Asn Ala Asp Phe Arg Phe Cys Val 155

Lys Ala Lys Arg Lys Thr Asn Leu Thr Trp Ser Cys Arg Val Asn Lys 170

Thr Gln His Ala Ser Thr Lys Leu Phe Leu Asn Leu Ala Thr Leu Leu 180 185

Pro Phe Cys Val Cys Leu Met Ser Phe Phe Leu Leu Ile Leu Ser Leu 200

Arg Arg His Ile Arg Arg Met Gln Leu Ser Ala Thr Gly Cys Arg Asp 215

Pro Ser Thr Glu Ala His Val Arg Ala Leu Lys Ala Val Ile Ser Phe 230 235

Leu Leu Phe Ile Ala Tyr Tyr Leu Ser Phe Leu Ile Ala Thr Ser 250

Ser Tyr Phe Met Pro Glu Thr Glu Leu Ala Val Ile Phe Gly Glu Ser 265

Ile Ala Leu Ile Tyr Pro Ser Ser His Ser Phe Ile Leu Ile Leu Gly 280

Asn Asn Lys Leu Arg His Ala Ser Leu Lys Val Ile Trp Lys Val Met 295

Ser Ile Leu Lys Gly Arg Lys Phe Gln Gln His Lys Gln Ile 310

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	1	gea Ala			5				. дес	10	r rne	з тег	ı ATS	a Val	- Gl 15	ı gag ⁄Glu	48
				20			1		25	rrie	: тте	; GTZ	, ren	Val 30	. Asn	tgc Cys	96
			35		.	-10	9	40	. TTG	АТА	ser	. ITe	Asp 45	Leu	Ile	ctc Leu	144
		50					55	T.T.C	Cys	теа	ьеи	Cys 60	Val	Ile	Leu	tta Leu	192
	65					70		- y <u>-</u>	110	gat Asp	75	туг	Ala	Thr	Gly	Lys 80	240
			_		85		1116	rne	ırb	aca Thr 90	Leu	Thr	Asn	His	Leu 95	Ser	288
				100		0,70	Lou	per	105	tac Tyr	Tyr	Phe	Phe	Lys 110	Ile	Gly	336
			115					120	rrb	atg Met	пуѕ	Trp	Arg 125	Ile	Asp	Arg	384
,	gtg Val	att Ile 130	tcc Ser	tgg Trp	att Ile		ctg Leu 1:35	ej gag	tgc Cys	gtg Val	gtt Val	ctc Leu 140	tct Ser	gtg Val	ttt Phe	att Ile	432

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143	1	50		gat ttc agg ttt Asp Phe Arg Phe 155	Cys Val
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	180		185	aac ctg gca acg Asn Leù Ala Thr 190	Leu Leu
195		200)	ctc ttg atc ctc Leu Leu Ile Leu 205	Ser Leu
210		215		gcc aca ggg tgc Ala Thr Gly Cys 220	Arg Asp
225	23	0		aaa gct gtc att Lys Ala Val Ile ; 235	Ser Phe
	245	•	250	ttt ctc att gcc a Phe Leu Ile Ala 1	acc tcc 768 Thr Ser
2	60		265	ortg att ttt ggt o Val Ile Phe Gly G 270	gag tcc 816 Glu Ser
275		280	302 1	tt atc cta ata c he Ile Leu Ile L 285	eu Gly
aac aat aaa ti Asn Asn Lys Le 290	ta aga cat eu Arg His	gca tct Ala Ser 295	cta aag g Leu Lys V	tg att tgg aaa g al Ile Trp Lys V 300	al Ile
tct att cta aa Ser Ile Leu Ly 305	aa gga aga /s Gly Arg 310	aaa ttc Lys Phe	GIII II.	at aaa caa atc to is Lys Gln Ile l5	ga 957
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35 40 45

Thr Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Leu Leu 50 55 60

Asp Cys Phe Ile Leu Val Leu Tyr Pro Asp Val Tyr Ala Thr Gly Lys 65 70 75 80'

Glu Met Arg Ile Ile Asp Phe Phe Trp Thr Leu Thr Asn His Leu Ser 85 90 95

Ile Trp Phe Ala Thr Cys Leu Ser Ile Tyr Tyr Phe Phe Lys Ile Gly 100 105 110

Asn Phe Phe His Pro Leu Phe Leu Trp Met Lys Trp Arg Ile Asp Arg 115 120 125

Val Ile Ser Trp Ile Leu Leu Gly Cys Val Val Leu Ser Val Phe Ile 130 135 140

Ser Leu Pro Ala Thr Glu Asn Leu Asn Ala Asp Phe Arg Phe Cys Val 145 150 155 160

Lys Ala Lys Arg Lys Thr Asn Leu Thr Trp Ser Cys Arg Val Asn Lys 165 170 175

Thr Gln His Ala Ser Thr Lys Leu Phe Leu Asn Leu Ala Thr Leu Leu 180 185 190

Pro Phe Cys Val Cys Leu Met Ser Phe Phe Leu Leu Ile Leu Ser Leu 195 200 205

Arg Arg His Ile Arg Arg Met Gln Leu Ser Ala Thr Gly Cys Arg Asp 210 215 220

Pro Ser Thr Glu Ala His Val Arg Ala Leu Lys Ala Val Ile Ser Phe 225 230 235 240

Leu Leu Leu Phe Ile Ala Tyr Tyr Leu Ser Phe Leu Ile Ala Thr Ser 245 250 255

Ser Tyr Phe Met Pro Glu Thr Glu Leu Ala Val Ile Phe Gly Glu Ser 260 265 270

Ile Ala Leu Ile Tyr Pro Ser Ser His Ser Phe Ile Leu Ile Leu Gly 275 280 285

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gat Asp 65	tgt Cys	ttt Phe	ata Ile	ttg Leu	gtg Val 70	cta Leu	tat Tyr	cca Pro	gat Asp	gtc Val 75	tat Tyr	gcc Ala	act Thr	ggt Gly	aaa Lys 80	24	40
gaa Glu	atg Met	aga Arg	atc Ile	att Ile 85	gac Asp	ttc Phe	ttc Phe	tgg Trp	aca Thr 90	cta Leu	acc Thr	aat Asn	cat His	tta Leu 95	agt Ser	28	88
atc Ile	tgg Trp	ttt Phe	gca Ala 100	acc Thr	tgc Cys	ctc Leu	agc Ser	att Ile 105	tac Tyr	tat Tyr	ttc Phe	ttc Phe	aag Lys 110	ata Ile	ggt Gly	33	36
aat Asn	ttc Phe	ttt Phe 115	cac His	cca Pro	ctt Leu	ttc Phe	ctc Leu 120	tgg Trp	atg Met	aag Lys	tgg Trp	aga Arg 125	att Ile	gac Asp	agg Arg	38	84
gtg Val	att Ile 130	tcc Ser	tgg Trp	att Ile	cta Leu	ctg Leu 135	GJÀ aaa	tgc Cys	gtg Val	gtt Val	ctc Leu 140	tct Ser	gtg Val	ttt Phe	att Ile	43	32
agc Ser 145	ctt Leu	cca Pro	gcc Ala	act Thr	gag Glu 150	aat Asn	ttg Leu	aac Asn	gct Ala	gat Asp 155	ttc Phe	agg Arg	ttt Phe	tgt Cys	gtg Val 160	48	80
aag Lys	gca Ala	aag Lys	agg Arg	aaa Lys 165	aca Thr	aac Asn	tta Leu	act Thr	tgg Trp 170	agt Ser	tgc Cys	aga Arg	gta Val	aat Asn 175	aaa Lys	52	28
act Thr	caa Gln	cat His	gct Ala 180	tct Ser	acc Thr	aag Lys	tta Leu	ttt Phe 185	ctc Leu	aac Asn	ctg Leu	gca Ala	acg Thr 190	ctg Leu	ctc Leu	5	76
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cgg Arg	aga Arg 210	cat His	atc Ile	agg Arg	cga Arg	atg Met 215	cag Gln	ctc Leu	agt Ser	gcc Ala	aca Thr 220	Gly ggg	tgc Cys	aga Arg	gac Asp	6,	72
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ata Ile	gct Ala	cta Leu 275	atc Ile	tac Tyr	ccc Pro	tca Ser	agt Ser 280	cat His	tca Ser	ttt Phe	atc Ile	cta Leu 285	ata Ile	ctg Leu	GJÀ āāā	8	64

aac aat aaa tta aga cat gca tct cta aag gtg att tgg aaa gta atg Asn Asn Lys Leu Arg His Ala Ser Leu Lys Val Ile Trp Lys Val Met 912 tct att cta aaa gga aga aaa ttc caa caa cat aaa caa atc tga Ser Ile Leu Lys Gly Arg Lys Phe Gln Gln His Lys Gln Ile 957 <210> 92 <211> 318 <212> PRT <213> homo sapiens <400> 92 Met Ala Asp Lys Val Gln Thr Thr Leu Leu Phe Leu Ala Val Gly Glu Phe Ser Val Gly Ile Leu Gly Asn Ala Phe Ile Gly Leu Val Asn Cys Met Asp Trp Val Lys Lys Arg Lys Ile Ala Ser Ile Asp Leu Ile Leu 40 Thr Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Leu Leu Asp Cys Phe Ile Leu Val Leu Tyr Pro Asp Val Tyr Ala Thr Gly Lys Glu Met Arg Ile Ile Asp Phe Phe Trp Thr Leu Thr Asn His Leu Ser 90 Ile Trp Phe Ala Thr Cys Leu Ser Ile Tyr Tyr Phe Phe Lys Ile Gly 105 110 Asn Phe Phe His Pro Leu Phe Leu Trp Met Lys Trp Arg Ile Asp Arg Val Ile Ser Trp Ile Leu Leu Gly Cys Val Val Leu Ser Val Phe Ile Ser Leu Pro Ala Thr Glu Asn Leu Asn Ala Asp Phe Arg Phe Cys Val

Lys Ala Lys Arg Lys Thr Asn Leu Thr Trp Ser Cys Arg Val Asn Lys

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Thr Gln His Ala Ser Thr Lys Leu Phe Leu Asn Leu Ala Thr Leu Leu 180 . 185 190

Pro Phe Cys Val Cys Leu Met Ser Phe Phe Leu Leu Ile Leu Ser Leu 195 200 205

Arg Arg His Ile Arg Arg Met Gln Leu Ser Ala Thr Gly Cys Arg Asp 210 215 220

Pro Ser Thr Glu Ala His Val Arg Ala Leu Lys Ala Val Ile Ser Phe 230 235

Leu Leu Leu Phe Ile Ala Tyr Tyr Leu Ser Phe Leu Ile Ala Thr Ser 245 250

Ser Tyr Phe Met Pro Glu Met Glu Leu Ala Val Ile Phe Gly Glu Ser 260 265

Ile Ala Leu Ile Tyr Pro Ser Ser His Ser Phe Ile Leu Ile Leu Gly 275 280

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ttt Phe	tca Ser	gtg Val	ggg Gly 20	ato Ile	tta Leu	ggg Gly	aat Asn	gca Ala 25	ttc Phe	att	gga Gly	ttg / Leu	gta Val	a aac . Asn	tgc Cys	96
atg Met	gac Asp	tgg Trp 35	gtc Val	aag Lys	aag Lys	agg Arg	aaa Lys 40	att : Ile	gcc Ala	tcc Ser	att	gat Asp 45	tta Leu	ato Ile	ctc Leu	144
aca Thr	agt Ser 50	ctg Leu ,	gcc Ala	ata Ile	tcc Ser	aga Arg 55	att Ile	tgt Cys	cta Leu	ttg Leu	Cys Cys	gta Val	ata Ile	cta Leu	tta Leu	192
gat Asp 65	tgt Cys	ttt Phe	ata Ile	ttg Leu	gtg Val 70	cta Leu	tat Tyr	cca Pro	gat Asp	gtc Val 75	tat Tyr	gcc Ala	act Thr	ggt Gly	aaa Lys 80	240
gaa Glu	atg Met	aga Arg	atc Ile	att Ile 85	gac Asp	ttc Phe	ttc Phe	tgg Trp	aca Thr 90	cta Leu	acc Thr	aat Asn	cat His	tta Leu 95	agt Ser	288
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161/447 PC1/US20	04/019489
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cccagcacag aagcccatgt gagagccctg aaagctgtca tttccttcct tctcctcttt	
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ttagctgtga tttttggtga gtccataggt gtack i	792
ttagctgtga tttttggtga gtccatagct ctaatctacc cctcaagtca ttcatttatc	852
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Thr Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Leu Leu 50 55 60	
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Glu Met Arg Ile Ile Asp Phe Phe Trp Thr Leu Thr Asn His Leu Ser 85 90 95	
Ile Trp Phe Ala Thr Cys Leu Ser Ile Tyr Tyr Phe Phe Lys Ile Gly 100 105 110	
Asn Phe Phe His Pro Leu Phe Leu Trp Met Lys Trp Arg Ile Asp Arg 115 120 125	

Val Ile Ser Trp Ile Leu Leu Gly Cys Val Val Leu Ser Val Phe Ile 135

Ser Leu Pro Ala Thr Glu Asn Leu Asn Ala Asp Phe Arg Phe Cys Val 150 155

Lys Ala Lys Arg Lys Thr Asn Leu Thr Trp Ser Cys Arg Val Asn Lys 165 170

Thr Gln His Ala Ser Thr Lys Leu Phe Leu Asn Leu Ala Thr Leu Leu 180 185

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ttt Phe	tca Ser	gtg Val	ggg Gly 20	atc	tta Leu	GJ Å āāā	aat Asn	gca Ala 25	ttc Phe	att Ile	gga Gly	ttg Leu	gta Val 30	aac Asn	tgc Cys		96
		35	Val	nys	пуs	Arg	ьуs 40	TTE	Ala	Ser	Ile	gat Asp 45	Leu	Ile	Leu		144
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cgg Arg	aga Arg 210	cat His	atc Ile	agg Arg	cga Arg	atg Met 215	cag Gln	ctc Leu	agt Ser	gcc Ala	aca Thr 220	GJ Å aaa	tgc Cys	aga Arg	gac Asp	6	572
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	- 1		260	110	Giu	ser	GIU	265	Ala	Val	Ile	Phe	Gly 270	Glu		816
	*****	275		TÄT	PLO	ser	280	HIS	Ser	Phe	Ile	Leu 285	Ile	Leu	Gly	864
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tct Ser 305	TIG	cta Leu	aaa Lys	gga Gly	aga Arg 310	aaa Lys	ttc Phe	caa Gln	caa Gln	cat His 315	aaa Lys	caa Gln	atc Ile	tga		957
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Met	Asp	Trp 35	Val	Lys	Lys	Arg	Lys 40	Ile	Ala	Ser	Ile	Asp 45	Leu	Ile	Leu	
Thr	Ser 50	Leu	Ala	Ile	Ser	Arg 55	Ile	Cys	Leu	Leu	Cys 60	Val	Ile	Leu	Leu	
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Glu	Met	Arg	Ile	Thr 85	Asp	Phe	Phe	Trp	Thr 90	Leu	Thr	Asn	His	Leu 95	Ser	
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Asn	Phe	Phe 115	His	Pro	Leu	Phe	Leu 120	Trp	Met	Lys	Trp	Arg 125	Ile	Asp	Arg	

Val Ile Ser Trp Ile Leu Leu Gly Cys Val Val Leu Ser Val Phe Ile 130 135 140

Ser Leu Pro Ala Thr Glu Asn Leu Asn Ala Asp Phe Arg Phe Cys Val 145 150 155 160

Lys Ala Lys Arg Lys Thr Asn Leu Thr Trp Ser Cys Arg Val Asn Lys 165 170 175

Thr Gln His Ser Ser Thr Lys Leu Phe Leu Asn Leu Ala Thr Leu Leu 180 185 190

Pro Phe Cys Val Cys Leu Met Ser Phe Phe Leu Leu Ile Leu Ser Leu 195 200 205

Arg Arg His Ile Arg Arg Met Gln Leu Ser Ala Thr Gly Cys Arg Asp 210 215 220

Pro Ser Thr Glu Ala His Val Arg Ala Leu Lys Ala Val Ile Ser Phe 225 230 235 240

Leu Leu Leu Phe Ile Ala Tyr Tyr Leu Ser Phe Leu Ile Ala Thr Ser 245 250 255

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50	55	att tgt ttg atc ac Ile Cys Leu Ile Se 60	or war Met Val Va	1
05	70	aac cca gat gtt ta Asn Pro Asp Val Ty 75	r inr Lys Asn Ly	s
8	85	ttc tgg aca ttt gc Phe Trp Thr Phe Al 90	a Asn Tyr Leu Ası 95	מ
100		aat gtc ttc tat tt Asn Val Phe Tyr Ph 105	e Leu Lys Ile Ala 110	ı
112	:	ctc tgg ctg aag tgg Leu Trp Leu Lys Trp 120	125 Tie Asp Met	
gtg gtg cac tgg a Val Val His Trp I 130	tc ctg ctg o le Leu Leu (135	gga tgc ttt gcc att Bly Cys Phe Ala Ile 140	s ser Leu Leu Val	432

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				165				****	170	Met	Pne	His	Val	Ser 175		528
			180			-54		185	FIIG	Asn	Leu	Phe	Ala 190	Ile	gtc Val	576
		195				-20	200	r 116	rne	ьeи	Leu	Val 205	Arg	Ser	tta Leu	624
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35 40 45

Thr Asn Leu Val Ile Ala Arg Ile Cys Leu Ile Ser Val Met Val Val 50 55 60

Asn Gly Ile Val Ile Val Leu Asn Pro Asp Val Tyr Thr Lys Asn Lys 65 70 75 80

Gln Gln Ile Val Ile Phe Thr Phe Trp Thr Phe Ala Asn Tyr Leu Asn 85 90 95

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Ser Ser Ser His Pro Leu Phe Leu Trp Leu Lys Trp Lys Ile Asp Met 115 120 125

Val Val His Trp Ile Leu Leu Gly Cys Phe Ala Ile Ser Leu Leu Val 130 135 . 140

Ser Leu Ile Ala Ala Ile Val Leu Ser Cys Asp Tyr Arg Phe His Ala 145 150 155 160

Ile Ala Lys His Lys Arg Asn Ile Thr Glu Met Phe His Val Ser Lys 165 170 175

Ile Pro Tyr Phe Glu Pro Leu Thr Leu Phe Asn Leu Phe Ala Ile Val 180 185 190

Pro Phe Ile Val Ser Leu Ile Ser Phe Phe Leu Leu Val Arg Ser Leu 195 200 205

Trp Arg His Thr Lys Gln Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp 210 215 220

Pro Ser Thr Glu Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe 225 230 235 240

Ile Phe Phe Phe Phe Leu Tyr Tyr Ile Ser Ser Ile Leu Met Thr Phe 245 250 255

Ser Tyr Leu Met Thr Lys Tyr Lys Leu Ala Val Glu Phe Gly Glu Ile
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caa cag ata gtc att ttt acc ttc tgg aca ttt gcc aac tac tta aat St gling Gln Gln Ile Val Ile Phe Thr Phe Trp Thr Phe Ala Asn Tyr Leu Asn 95 atg tgg att acc acc tgc ctt aat gtc ttc tat ttt ctg aag ata gcc 100 105 agt tcc tct cat cca ctt ttt ctc tgg ctg aag tgg aaa att gat atg 115 agt tcc tct cat cca ctt ttt ctc tgg ctg aag tgg aaa att gat atg 125 gtg gtg cac tgg atc ctg ctg gga tgc ttt gcc att tcc ttg ttg gtc 125 gtg gtg cac tgg atc ctg ctg gga tgc ttt gcc att tcc ttg ttg gtc 130 130 agc ctt ata gca gca ata gta ctg agt tg gat at a agg ttt cat gca 130 agc ctt ata gca gca ata gta ctg agt tg gat tat agg ttt cat gca 140 agc ctt ata gca gca ata gta ctg agt tg gat tat agg ttt cat gca 150 agc ctt ata gca gca ata gta ctg agt tg gat tat agg ttt cat gca 140 agc ctt ata gca gca ata gta ctg agt tg gat tat agg ttt cat gca 150 att gcc aaa cat aaa aga aac att act gaa atg ttc cat gtg agt aaa 165 att gcc aaa cat ttg ga ccc ttg act ctc ttt aac gca atg 160 att gcc aaa cat ttg ga ccc ttg act ctc ttt aac gcd atg ttg gat tat agg ttc cat gcg at 165 ata cca tac ttt gaa ccc ttg act ctc ttt aac ctg ttt gca att tcc ttg ttg agt aaa 165 ata cca tac ttt gaa ccc ttg act ctc ttt aac ctg ttt gca att gtc 170 ata cca tac ttt gaa ccc ttg act ctc ttt aac ctg ttt gca att gtc 180 cca ttt att gtg tca ctg ata tca ttt tc ctt tta gta aga tct tta 180 cca ttt att gtg tca ctg ata tca ttt tc ctt tta gta aga tct tta 195 cca ttt att gtg tca ctg ata tca ttt tc ctt tta gca aga tct tta 195 cca ttt att gtg tca ctg ata aca ctc tat gct acc gc agt aga gac at 195 cca agc aca gaa gtt cat gtg aga gcc att aaa act atg act tca ttt 180 cca acc acc acc acc acc acc acc acc ac			170/447	1 C1/052004/019
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agt tcc tcc cat cac ccc ctt ttt ctc tgg ctg aag tgg aaa att gat atg 125 gtg gtg cac tgg atc ctg ctg gga tgc ttt gcc att tcc ttg ttg gtc Val Val His Trp Ile Leu Leu Gly Cys Phe Ala Ile Ser Leu Ile Ala Ala Ile Val Leu Ser Cys Asp Tyr Arg Phe His Ala 160 att gcc aaa cat aaa aga ac att act gca gat tgt gat tat agg ttt cat gca gree Leu Ile Ala Lys His Lys Arg Asn Ile Thr Glu Met Phe His Val Ser Lys 170 ata cca tac ttt gac cc ttg gac ctt att tcc ttt gac att tcat gca att gcc act act act act tt gac act ttt gcc att tcc ttt gac act leu Ile Ala Ile Val Leu Ser Cys Asp Tyr Arg Phe His Ala 160 att gcc aaa cat aaa aga ac att act gac att gtc cat gtg agt aaa 1665 att gcc aaa cat act ttt gac ccc ttg act ctc ttt acc ttt gcc att gcc att tcat gcc act act ttt gcc act ctt ttt gcc act ttt ttc ctt tta acc gtg agt aca 1665 att gcc aaa cat at att gcc ctg att ctc ttt acc gcc att gcc acc ttt gcc acc acc acc act act ttt gac acc ttt att gcc acc ttt gcc act gtg acc act acc act act ttt gac acc ttt att gcc acc ttt att gcc acc ttt att gcc acc ttt att gcc acc ttt acc acc acc acc acc acc acc a		85	90 See Ala Ash Tyr Leu	Asn
gtg gtg cac tgg atc ctg ctg gga tgc ttt gcc att tcc ttg ttg gtc 130 135	_	.00	105 The Leu Lys Ile	Ala
agc ctt ata gca gca ata gta ctg agt tgt gat tat agg ttt cat gca 480 145 agc ctt ata gca gca ata gta ctg agt tgt gat tat agg ttt cat gca 480 145 att gcc aaa cat aaa aga aac att act gaa atg ttc cat gtg agt aaa 160 att gcc aaa cat aaa aga aac att act gaa atg ttc cat gtg agt aaa 165 at gcc aaa cat tt gaa ccc ttg act ctc ttt aac ctg ttt gca att gtc 175 ata cca tac ttt gaa ccc ttg act ctc ttt aac ctg ttt gca att gtc 180 cca ttt att gtg tca ctg ata tca ttt tc ctt tta gta aga tct tta 195 cca ttt att gtg tca ctg ata tca ttt ttc ctt tta gta aga tct tta 195 cca ttt att gtg tca ctg ata aaa ctc ttt gag aga gcc att acc ggc agt aga gac at acc ag caa ata aaa ctc tat gct acc ggc agt aga gac acc aga gac at acc ag gca att gtc 195 ccc agc aca gaa gtt cat gtg aga gcc att aaa act att act acc acc acc acc a	413	12	125 TIP TYS ITE Asp	Met
att gcc aaa cat aaa aga aac att act gaa atg ttc cat gtg agt aaa 528 Ile Ala Lys His Lys Arg Asn Ile Thr Glu Met Phe His Val Ser Lys 175 ata cca tac ttt gaa ccc ttg act ctc ttt aac ctg ttt gca att gtc Nala Ile Val 180 Cca ttt att gtg tca ctg ata tca ttt ttc cta ttt ttc cta gtg aga cat acc agg caa ata aaa ctc ttt ttc cta gtg aga ctc tta gtg aga cat acc agg caa ata aaa ctc tta gct Nala Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp 200 cca agg aga cat acc aag caa ata aaa ctc tta gct acc ggc agt aga gac for 210 ccc agg aga cat acc agg caa ata aaa ctc tta gct acc ggc agt aga gac for 220 ccc agc aca gaa gtt cat gtg aga gcc att aaa act atg act tca ttt for Ser Thr Gly Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe Phe Phe Phe Phe Phe Leu Tyr Tyr Ile Ser Ser Ile Leu Met Thr Phe 255 agc tat ctt atg aga cat acc as as acc as acc atg aga cat ttt ttc cta att ttg atg acc ttt acc acc acc acc acc acc acc acc	100	135	140	Val
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cca ttt att gtg tca ctg ata tca ttt ttc ctt tta gta aga tct tta 190 cca ttt att gtg tca ctg ata tca ttt ttc ctt tta gta aga tct tta 195 tgg aga cat acc aag caa ata aaa ctc tat gct acc ggc agt aga gac 210 ccc agc aca gaa gtt cat gtg aga gcc att aaa act atg act tca ttt 220 ccc agc aca gaa gtt cat gtg aga gcc att aaa act atg act tca ttt 220 ccc agc aca gaa gtt cat gtg aga gcc att aaa act atg act tca ttt 720 atc ttc ttt ttt ttc cta tac tat att tct tc		165	170 175 His val Ser I	ys
tgg aga cat acc aag caa ata aaa ctc tat gct acc ggc agt aga gac 672 Trp Arg His Thr Lys Gln Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp 210 ccc agc aca gaa gtt cat gtg aga gcc att aaa act atg act tca ttt Pro Ser Thr Glu Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe 235 atc ttc ttt ttt ttc cta tac tat att tct tc	18	10	185 Then bed Fre Ala Ile V	al
ccc agc aca gaa gtt cat gtg aga gcc att aaa act atg act tca ttt Pro Ser Thr Glu Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe 230 atc ttc ttt ttt ttc cta tac tat att tct tc	195	200	205	eu
atc ttc ttt ttt ttc cta tac tat att tct tc	2.10	215	220 Ser Arg A	ąp
Ile Phe Phe Phe Leu Tyr Tyr Ile Ser Ser Ile Leu Met Thr Phe 245 250 255		230	235	ie
ago tat off ato ago and a		245	att tot tot att ttg atg acc tt Ile Ser Ser Ile Leu Met Thr Ph 250	t 768
265 270	260	2	tta gct gtg gag ttt gga gag at Geu Ala Val Glu Phe Gly Glu Il 265	e
gca gca att ctc tac ccc ttg ggt cac tca ctt att tta att gtt tta 864 Ala Ala Ile Leu Tyr Pro Leu Gly His Ser Leu Ile Leu Ile Val Leu 275 280 285	2/5	280	eac tca ctt att tta att gtt tt is Ser Leu Ile Leu Ile Val Le 285	ı
aat aat aaa ctg agg cag aca ttt gtc aga atg ctg aca tgt aga aaa 912 Asn Asn Lys Leu Arg Gln Thr Phe Val Arg Met Leu Thr Cys Arg Lys 290 295 300	aat aat aaa ctg Asn Asn Lys Leu 290	agg cag aca ttt g Arg Gln Thr Phe V 295	Inr Cys Arg Lys	a 912

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Ile Asp Trp Ile Lys Lys Lys Lys Ile Ser Thr Val Asp Tyr Ile Leu 35 40 45

Thr Asn Leu Val Ile Ala Arg Ile Cys Leu Ile Ser Val Met Val Val 50 55 60

Asn Gly Ile Val Ile Val Leu Asn Pro Asp Val Tyr Thr Lys Asn Lys 65 70 75 80

Gln Gln Ile Val Ile Phe Thr Phe Trp Thr Phe Ala Asn Tyr Leu Asn 85 90 95

Met Trp Ile Thr Thr Cys Leu Asn Val Phe Tyr Phe Leu Lys Ile Ala 100 105 110

Ser Ser Ser His Pro Leu Phe Leu Trp Leu Lys Trp Lys Ile Asp Met 115 120 125

Val Val His Trp Ile Leu Leu Gly Cys Phe Ala Ile Ser Leu Leu Val 130 135 140

Ser Leu Ile Ala Ala Ile Val Leu Ser Cys Asp Tyr Arg Phe His Ala 145 150 155 160

Ile Ala Lys His Lys Arg Asn Ile Thr Glu Met Phe His Val Ser Lys 165 170 175

Ile Pro Tyr Phe Glu Pro Leu Thr Leu Phe Asn Leu Phe Ala Ile Val

Pro Phe Ile Val Ser Leu Ile Ser Phe Phe Leu Leu Val Arg Ser Leu

205

195 200

Trp Arg His Thr Lys Gln Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp 210

Pro Ser Thr Glu Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe

Ile Phe Phe Phe Leu Tyr Tyr Ile Ser Ser Ile Leu Met Thr Phe

Ser Tyr Leu Met Thr Lys Tyr Lys Leu Ala Val Glu Phe Gly Glu Ile

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		35				2,0	40	, TT6	s ser	rnr	· Val	Asp 45	э Туз	: Ile	ctt Leu	144
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65					70	204	71011	. FIO	Asp	75	туг	Thr	: Lys	Asn	aaa Lys 80	240
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	tcc Ser	115					120	ııp	ьец	газ	Trp	Lys 125	Ile	Asp	Met	384
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Thr	Asn 50	Leu	Val	Ile	Ala	Arg 55	Ile	Cys	Leu	Ile	Ser 60	Val	Met	Val	Val		
Asn 65	Gly	Ile	Val	Ile	Val 70	Leu .	Asn	Pro	Asp	Val 75	Tyr	Thr	Lys		Lys 80		

Gln Gln Ile Val Ile Phe Thr Phe Trp Thr Phe Ala Asn Tyr Leu Asn

Met Trp Ile Thr Thr Cys Leu Asn Val Phe Tyr Phe Leu Lys Ile Ala 100 105 110

90

Ser Ser Ser His Pro Leu Phe Leu Trp Leu Lys Trp Lys Ile Asp Met 115 120 125

- Val Val His Trp Ile Leu Leu Gly Cys Phe Ala Ile Ser Leu Leu Val
- Ile Ala Lys His Lys Arg Asn Ile Thr Glu Met Phe His Val Ser Lys
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- Ile Pro Tyr Phe Glu Pro Leu Thr Leu Phe Asn Leu Phe Ala Ile Val 180 180 185
- Pro Phe Ile Val Ser Leu Ile Ser Phe Phe Leu Leu Val Arg Ser Leu 195 200 205
- Trp Arg His Thr Lys Gln Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp 210 220
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275	280	cac tca ctt att tta att o His Ser Leu Ile Leu Ile v 285	Val Leu
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Pro	Phe	Ile 195	Val	Ser	Leu	Ile	Ser 200	Phe	Phe	Leu	Leu	Val 205	Arg	Ser	Leu
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ttc ata cta gga ata Phe Ile Leu Gly Ile : 20	tg ggg aat gga tac att gca cta g eu Gly Asn Gly Tyr Ile Ala Leu v 25	gtc aac tgg 96 Val Asn Trp 30
att gac tgg att aag i Ile Asp Trp Ile Lys 3 35	aag aaa aag att too aca gtt gac t Lys Lys Lys Ile Ser Thr Val Asp 1 40 45	tac atc ctt 144 Tyr Ile Leu
acc aat tta gtt atc of Thr Asn Leu Val Ile 2	gcc aga att tgt ttg atc agt gta a Ala Arg Ile Cys Leu Ile Ser Val 1 55 60	atg gtt gta 192 Met Val Val

aat ggc att gta ata gta ctg aac cca gat gtt tat aca aaa aat aaa Asn Gly Ile Val Ile Val Leu Asn Pro Asp Val Tyr Thr Lys Asn Lys

									180	0/447						
65					70					75					80	
				85					90	T EII.	e at	a ASI	а ту	r Le 95	a aat u Asn	
			100)	_			105	5	e ry:	r Pn	е тел	ı Ly: 11(s Il. O	a gcc e Ala	336
		115	5				120)	, 116,	и груз	з Ст	у љуs 125	i Ile	e Ası	atg Met	384
	130					135		Ų, s	E 116	s ATS	140	∋ Ser)	Leu	ı Leı	g gtc ı Val	432
145					150		200	. Det	Cys	155	у Туг Б	: Arg	Phe	His	gca Ala 160	480
				165	_			****	170	Met)	Pne	His	Val	Ser 175		528
			180					185	rue	Asn	Leu	Phe	Ala 190	Ile		576
		195					200	rne	rue	ьeu	Leu	gta Val 205	Arg	Ser	Leu	624
	210			•		215	-30	neu.	ıÿr	нта	220	ggc Gly	Ser	Arg	Asp	672
225					230		• • • · · · · · · · · ·	211G	*T6	235	Tnr	atg Met	Thr	Ser	Phe 240	720
atc : Ile :	ttc Phe	ttt Phe	ttt Phe	ttc Phe 245	cta Leu	tac Tyr	tat Tyr	att Ile	tct Ser 250	tct Ser	att Ile	ttg Leu	atg Met	acc Thr 255	ttt Phe	768
agc f	tat Tyr	ctt Leu	atg Met 260	aca Thr	aaa Lys	tac Tyr	دوب	tta Leu 265	gct Ala	gtg Val	gag Glu	ttt Phe	gga Gly 270	gag Glu	att Ile	816
gca (Ala <i>A</i>	jca ; lla ;	att Ile 275	ctc Leu	tac Tyr	ccc Pro		ggt Gly 280	cac His	tca Ser	ctt Leu	att Ile	tta Leu 285	att Ile	gtt Val	tta Leu	864
aat a Asn A	at a sn 1 90	aaa Lys :	ctg Leu i	agg Arg		aca i Thr 1 295	ttt (Phe	gtc a Val a	aga Arg	Mec	ctg Leu 300	aca Thr	tgt Cys	aga Arg	aaa Lys	912
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Phe Ile Leu Gly Ile Leu Gly Asn Gly Tyr Ile Ala Leu Val Asn Trp 20 25 30

Ile Asp Trp Ile Lys Lys Lys Ile Ser Thr Val Asp Tyr Ile Leu 35 40 45

Thr Asn Leu Val Ile Ala Arg Ile Cys Leu Ile Ser Val Met Val Val 50 55 60

Asn Gly Ile Val Ile Val Leu Asn Pro Asp Val Tyr Thr Lys Asn Lys 65 70 75 80

Gln Gln Ile Val Ile Phe Thr Phe Trp Thr Phe Ala Asn Tyr Leu Asn 85 90 95

Met Trp Ile Thr Thr Cys Leu Asn Val Phe Tyr Phe Leu Lys Ile Ala 100 105 110

Ser Ser Ser His Pro Leu Phe Leu Trp Leu Lys Gly Lys Ile Asp Met 115 120 125

Val Val His Trp Ile Leu Leu Gly Cys Phe Ala Ile Ser Leu Leu Val 130 135 140

Ser Leu Ile Ala Ala Ile Val Leu Ser Cys Asp Tyr Arg Phe His Ala 145 150 155 160

Ile Ala Lys His Lys Arg Asn Ile Thr Glu Met Phe His Val Ser Lys 165 170 175

Ile Pro Tyr Phe Glu Pro Leu Thr Leu Phe Asn Leu Phe Ala Ile Val 180 185 190

Pro Phe Ile Val Ser Leu Ile Ser Phe Phe Leu Leu Val Arg Ser Leu 195 200 205

Trp Arg His Thr Lys Gln Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp 220

Pro Ser Thr Glu Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe 235 240

Ile Phe Phe Phe Leu Tyr Tyr Ile Ser Ser Ile Leu Met Thr Phe 250

Ser Tyr Leu Met Thr Lys Tyr Lys Leu Ala Val Glu Phe Gly Glu Ile 270

Ala Ala Ile Leu Tyr Pro Leu Gly His Ser Leu Ile Leu Ile Val Leu 280

Asn Asn Lys Leu Arg Gln Thr Phe Val Arg Met Leu Thr Cys Arg Lys 295

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<220>

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tto Phe	ata Ile	cta Leu	gga Gly 20	ata Ile	ttg Leu	r GJA 1 aaa	aat Asn	gga Gly 25	4.	att : Ile	gca Ala	a cta A Lev	gto Val 30	15 aac Asr	tgg Trp	96
	-	35	-	-3-	_,	±35	40	176	ser	' Thr	· Val	Asp 45	Туг	: Ile	ttt Phe	144
acc Thr	aat Asn 50	tta Leu	gtt Val	ato Ile	gcc Ala	aga Arg 55	att Ile	tgt Cys	ttg Leu	ato Ile	agt Ser 60	gta Val	atg Met	gtt Val	gta Val	192
aat Asn 65	ggc	att Ile	gta Val	ata Ile	gta Val 70	ctg Leu	aac Asn	cca Pro	gat Asp	gtt Val 75	tat Tyr	aca Thr	aaa Lys	aat Asn	aaa Lys 80	240
caa Gln	cag Gln	ata Ile	gtc Val	att Ile 85	ttt Phe	acc Thr	ttc Phe	tgg Trp	aca Thr 90	ttt Phe	gcc Ala	aac Asn	tac Tyr	tta Leu 95	aat Asn	288
	-		100		Oyb	Бей	ASII	105	Pne	Tyr	Phe	Leu	Lys 110	Ile	gcc Ala	336
agt Ser	tcc Ser	tct Ser 115	cat His	cca Pro	ctt Leu	ttt Phe	ctc Leu 120	tgg Trp	ctg Leu	aag Lys	tgg Trp	aaa Lys 125	att Ile	gat Asp	atg Met	384
gtg Val	gtg Val 130	cac His	tgg Trp	atc Ile	ctg Leu	ctg Leu 135	gga Gly	tgc Cys	ttt Phe	gcc Ala	att Ile 140	tcc Ser	ttg Leu	ttg Leu	gtc Val	432
agc Ser 145	ctt Leu	ata Ile	gca Ala	gca Ala	ata Ile 150	gta Val	ctg Leu	agt Ser	tgt Cys	gat Asp 155	tat Tyr	agg Arg	ttt Phe	cat His	gca Ala 160	480
		-		165	9	21011	TT6	1111	170	Met	Phe	cat His	Val	Ser 175	ГÀ2	528
		- -	180	01. u	110	пеп	III	185	Pne	Asn	Leu	ttt Phe	Ala 190	Ile	Val	576
cca Pro	ttt Phe	att Ile 195	gtg Val	tca Ser	ctg Leu	ata Ile	tca Ser 200	ttt Phe	ttc Phe	ctt Leu	tta Leu	gta Val 205	aga Arg	tct Ser	tta Leu	624
tgg Trp	aga Arg 210	cat His	acc Thr	aag Lys	caa Gln	ata Ile 215	aaa Lys	ctc Leu	tat Tyr	gct Ala	acc Thr 220	ggc Gly	agt Ser	aga Arg	gac Asp	672
Pro 225	agc Ser	aca Thr	gaa Glu	gtt Val	cat His 230	gtg Val	aga Arg	gcc Ala	att Ile	aaa Lys 235	act Thr	atg Met	act Thr	tca Ser	ttt Phe 240	720
atc Ile	ttc Phe	ttt Phe	ttt Phe	ttc Phe 245	cta Leu	tac Tyr	tat Tyr	тте	tct Ser 250	tct Ser	att Ile	ttg Leu	atg Met	acc Thr 255	ttt Phe	768

ago Sei	tat Tyr	ctt Leu	atg Met 260	aca Thr	aaa Lys	tac Tyr	aag Lys	tta Leu 265	gct Ala	gtg Val	gag Glu	ttt Phe	gga Gly 270	gag Glu	att Ile	816
gca Ala	a gca a Ala	att Ile 275	ctc Leu	tac Tyr	ccc Pro	ttg Leu	ggt Gly 280	cac His	tca Ser	ctt Leu	att Ile	tta Leu 285	att Ile	gtt Val	tta Leu	864
aat Aşr	aat Asn 290	пуз	ctg Leu	agg Arg	cag Gln	aca Thr 295	ttt Phe	gtc Val	aga Arg	atg Met	ctg Leu 300	aca Thr	tgt Cys	aga Arg	aaa Lys	912
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Ile	Asp	Trp 35	Ile	Lys	Lys	Lys	Lys 40	Ile	Ser	Thr	Val	Asp 45	Tyr	Ile	Phe	
Thr	Asn 50	Leu	Val	Ile	Ala	Arg 55	Ile	Суз	Leu	Ile	Ser 60	Val	Met	Val	Val	
Asn 65	Gly	Ile	Val	Ile	Val 70	Leu	Asn	Pro	Asp	Val 75	Tyr	Thr	Lys	Asn	Lys	
Gln	Gln	Ile	Val	Ile 85	Phe	Thr	Phe	Trp	Thr 90	Phe	Ala	Asn	Tyr	Leu 95	Asn	
Met	Trp	Ile	Thr 100	Thr	Cys	Leu	Asn	Val 105	Phe	Tyr	Phe	Leu	Lys 110	Ile	Ala	
Ser	Ser	Ser 115	His	Pro	Leu	Phe	Leu 120	Trp	Leu	Lys	Trp	Lys 125	Ile	Asp	Met	
Val	Val 130	His	Trp	Ile	Leu	Leu 135	Gly	Суз	Phe	Ala	Ile 140	Ser	Leu	Leu	Val	

Ser Leu Ile Ala Ala Ile Val Leu Ser Cys Asp Tyr Arg Phe His Ala 145 150 155 160

Ile Ala Lys His Lys Arg Asn Ile Thr Glu Met Phe His Val Ser Lys 165 170 175

Ile Pro Tyr Phe Glu Pro Leu Thr Leu Phe Asn Leu Phe Ala Ile Val

Pro Phe Ile Val Ser Leu Ile Ser Phe Phe Leu Leu Val Arg Ser Leu 195 200 205

Trp Arg His Thr Lys Gln Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp 210 215 220

Pro Ser Thr Glu Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe 235 230 235

Ile Phe Phe Phe Leu Tyr Tyr Ile Ser Ser Ile Leu Met Thr Phe 245 250 255

Ser Tyr Leu Met Thr Lys Tyr Lys Leu Ala Val Glu Phe Gly Glu Ile 260 270

Ala Ala Ile Leu Tyr Pro Leu Gly His Ser Leu Ile Leu Ile Val Leu 275 280 285

Asn Asn Lys Leu Arg Gln Thr Phe Val Arg Met Leu Thr Cys Arg Lys 290 295 300

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		1>		iatio 7))											
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	ttg Leu	acc Thr	ata Ile	ggg Gly 20	att Ile	tgg Trp	gga Gly	aat Asn	gga Gly 25	ttc Phe	att Ile	gta Val	cta Leu	gtt Val 30	aac Asn	tgc Cys	96
			35		2	9	9	40 40	116	ser	теп	TTE	Asp 45	Ile	Ile	ctg Leu	144
	atc Ile	agc Ser 50	ttg Leu	gcc Ala	atc Ile	tcc Ser	aga Arg 55	atc Ile	tgt Cys	ctg Leu	ctg Leu	tgt Cys 60	gta Val	ata Ile	tca Ser	tta Leu	192
	65					70	Lou	1116	FIO	GTĀ	75	Tyr	Gly	Asn	agc Ser	Val 80	240
				_	85	-1.011	Val	Val	пр	90	rne	Ala	Asn	Asn	tca Ser 95	Ser	288
				100	_	-10	Lou	Der	105	rne	Tyr	Leu	Leu	Lys 110	ata Ile	Ala	336
ž	aat Asn	ata Ile	tcg Ser 115	cac His	cca Pro	ttt Phe	ttc Phe	ttc Phe 120	tgg Trp	ctg Leu	aag Lys	cta Leu	aag Lys 125	atc Ile	aac Asn	aag Lys	384

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440					150			_		15	5 5	r Elle	; rãs	Val	agt Ser 160	480
Cat (165			_		170)	. Der	- тЛа	, тте	Pro	Gly	528
act t Thr I			180					185	2	· ~ ~	. Met	Vац	190	Phe	Ile	576
ctt t Leu C		195					200			* * * * * * * * * * * * * * * * * * * *	set	205	Val	Arg	His	624
acc a Thr L 2	10					215			1	-116	220	Asp	Pro	Ser	Thr	672
gag g Glu A 225					230		_			235	тте	rne	ьeu	Leu	Leu	720
ctc at Leu II			2	245				-	250	1100	1111	ser	Ser .	gct Ala	ctg Leu	768
att co Ile Pr		2	60					265		O.L.y	nap	тте	gta : Val : 270	act o	Val	816
att tt Ile Ph	2	/5				2	80		_ou	- T- G	Met (gga a Gly 1 285	aat a Asn S	Ser I	ууз	864
ttg ag Leu Ar 29	g G:	aa g lu A	ct t la P	tt c he I	tg a eu L 2	ag a ys M 95	itg i let 1	tta a Leu A	aga i Arg 1	L 11G	gtg a Val I 300	aag t Lys (tgt t Cys E	tc c	tt eu	912
aga aga Arg Arg 305	a aç g Ar	ga aa Gg Ly	ag co ys P	ro P	tt g he Va 10	tt c al P	ca t ro	ag								939
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Met Pro	Se:	r Al	a Il	e Gl	.u Al	a Il	.e T	vr I	le T	ז פו	o. T		_			

Met Pro Ser Ala Ile Glu Ala Ile Tyr Ile Ile Leu Ile Ala Gly Glu
1 10 15

Leu Thr Ile Gly Ile Trp Gly Asn Gly Phe Ile Val Leu Val Asn Cys

20 25 30

Ile Asp Trp Leu Lys Arg Arg Asp Ile Ser Leu Ile Asp Ile Ile Leu 35 40 45

Ile Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Ser Leu 50 55 60

Asp Gly Phe Phe Met Leu Leu Phe Pro Gly Thr Tyr Gly Asn Ser Val 65 70 75 80

Leu Val Ser Ile Val Asn Val Val Trp Thr Phe Ala Asn Asn Ser Ser 85 90 95

Leu Trp Phe Thr Ser Cys Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala
100 105 110

Asn Ile Ser His Pro Phe Phe Phe Trp Leu Lys Leu Lys Ile Asn Lys 115 120 125

Val Met Leu Ala Ile Leu Leu Gly Ser Phe Leu Ile Ser Leu Ile Ile 130 135 140

Ser Val Pro Lys Asn Asp Asp Met Trp Tyr His Leu Phe Lys Val Ser 145 150 155 160

His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly 165 170 175

Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Val Met Val Pro Phe Ile 180 185 190

Leu Cys Leu Ile Ser Phe Phe Leu Leu Leu Phe Ser Leu Val Arg His 195 200 205

Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr 210 215 220

Glu Ala His Met Arg Ala Ile Lys Ala Val Ile Ile Phe Leu Leu 225 230 235 240

Leu Ile Val Tyr Tyr Pro Val Phe Leu Val Met Thr Ser Ser Ala Leu 245 250 255

Ile Pro Gln Gly Lys Leu Val Leu Met Ile Gly Asp Ile Val Thr Val 260 265 270

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20 25 25 30 att gac tog etc and are	
att gac tgg ctc aaa aga aga gat	144
att gac tgg ctc aaa aga aga gat att tcc ttg att gac atc atc ctg Ile Asp Trp Leu Lys Arg Arg Asp Ile Ser Leu Ile Asp Ile Ile Leu 35 40 45	
atc agc ttg gcc atc tcc aga atc tgt ctg ctg tgt gta ata tca tta Ile Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Ser Leu 50 50 60	192
gat ggc ttc ttt atg ctg ctc ttt cca ggt aca tat ggc aat agc gtg Asp Gly Phe Phe Met Leu Leu Phe Pro Gly Thr Tyr Gly Asn Ser Val 70 75 80	240
cta gta agc att gtg aat gtt gtc tgg aca ttt gcc aat aat tca agt Leu Val Ser Ile Val Asn Val Val Trp Thr Phe Ala Asn Asn Ser Ser 85 90 95	288
ctc tgg ttt act tct tgc ctc agt atc ttc tat tta ctc aag ata gcc Leu Trp Phe Thr Ser Cys Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala 100 105	336
aat ata tcg cac cca ttt ttc ttc tgg ctg aag cta aag atc aac aag Asn Ile Ser His Pro Phe Phe Phe Trp Leu Lys Leu Lys Ile Asn Lys 115 120 125	384
gtc atg ctt gcg att ctt ctg ggg tcc ttt ctt atc tct tta att att Val Met Leu Ala Ile Leu Leu Gly Ser Phe Leu Ile Ser Leu Ile Ile 130 135 140	432
agt gtt cca aag aat gat gat atg tgg tat cac ctt ttc aaa gtc agt Ser Val Pro Lys Asn Asp Asp Met Trp Tyr His Leu Phe Lys Val Ser 150 155 160	480
cat gaa gaa aac att act tgg aaa ttc aaa gtg agt aaa att cca ggt His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly 165 170	528
act ttc aaa cag tta acc ctg aac ctg ggg gtg atg gtt ccc ttt atc Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Val Met Val Pro Phe Ile 180 185	576
ctt tgc ctg atc tca ttt ttc ttg tta ctt ttc tcc cta gtt aga cac Leu Cys Leu Ile Ser Phe Phe Leu Leu Phe Ser Leu Val Arg His 195 200 205	624
acc aag cag att cga ctg cat gct aca ggg ttc aga gac ccc agt aca Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr 210 215 220	672
gag gcc cac atg agg gcc ata aag gca gtg atc atc ttt ctg ctc ctc Glu Ala His Met Arg Ala Ile Lys Ala Val Ile Ile Phe Leu Leu 225 230	720
ctc atc gtg tac tac cca gtc ttt ctt gtt atg acc tct agc gct ctg Leu Ile Val Tyr Tyr Pro Val Phe Leu Val Met Thr Ser Ser Ala Leu	768

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att ttc Ile Phe	cca Pro 275	tca Ser	agc Ser	cat His	tca Ser	ttc Phe 280	att Ile	cta Leu	att Ile	atg Met	gga Gly 285	aat Asn	agc Ser	aag Lys	864
ttg agg Leu Arg 290	gaa Glu	gct Ala	ttt Phe	atg Met	aag Lys 295	atg Met	tta Leu	aga Arg	ttt Phe	gtg Val 300	aag Lys	tgt Cys	ttc Phe	ctt Leu	912
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Leu Thr	Ile	Gly 20	Ile	Trp	Gly	Asn	Gly 25	Phe	Ile	Val	Leu	Val 30	Asn	Суз	
Ile Asp	Trp 35	Leu	Lys	Arg	Arg	Asp 40	Ile	Ser	Leu	Ile	Asp 45	Ile	Ile	Leu	
Ile Ser 50	Leu	Ala	Ile	Ser	Arg 55	Ile	Суз	Leu	Leu	Cys 60	Val	Ile	Ser	Leu	
Asp Gly 65	Phe	Phe	Met	Leu 70	Leu	Phe	Pro	Gly	Thr 75	Tyr	Gly	Asn	Ser	Val 80	
Leu Val	Ser	Ile	Val 85	Asn	Val	Val	Trp	Thr 90	Phe	Ala	Asn	Asn	Ser 95	Ser	
Leu Trp	Phe	Thr 100	Ser	Суз	Leu	Ser	Ile 105	Phe	Tyr	Leu	Leu	Lys 110	Ile	Ala	
Asn Ile	Ser 115	His	Pro	Phe	Phe	Phe 120	Trp	Leu	Lys	Leu	Lys 125	Ile	Asn	Lys	
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His	Glu		Asn	Ile 165	Thr	Trp	Lys	Phe	Lys 170	Val	Ser	Lys	Ile	Pro 175	Gly
Thr	Phe	Lys	Gln 180	Leu	Thr	Leu	Asn	Leu 185	Gly	Val	Met	Val	Pro 190	Phe	Ile
Leu	Cys	Leu 195	Ile	Ser	Phe	Phe	Leu 200	Leu	Leu	Phe	Ser	Leu 205	Val	Arg	His
Thr	Lys 210	Gln	Ile	Arg	Leu	His 215	Ala	Thr	Gly	Phe	Arg 220	Asp	Pro	Ser	Thr
Glu 225	Ala	His	Met	Arg	Ala 230	Ile	Lys	Ala	Val	Ile 235	Ile	Phe	Leu	Leu	Leu 240
Leu	Ile	Val	Tyr	Tyr 245	Pro	Val	Phe	Leu	Val 250	Met	Thr	Ser	Ser	Ala 255	Leu
Ile	Pro	Gln	Gly 260	Lys	Leu	Val	Leu	Met 265	Ile	Gly	Asp	Ile	Val 270	Thr	Val
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act Thr	ttc Phe	aaa Lys	cag Gln 180	tta Leu	acc Thr	ctg Leu	aac Asn	ctg Leu 185	GJ Å āāā	gtg Val	atg Met	gtt Val	ccc Pro 190	ttt 'Phe	atc Ile	576
ctt Leu	tgc Cys	ctg Leu 195	atc Ile	tca Ser	ttt Phe	ttc Phe	ttg Leu 200	tta Leu	ctt Leu	ttc Phe	tcc Ser	cta Leu 205	gtt Val	aga Arg	cac His	624
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Ile	Ser 50	Leu	Ala	Ile	Ser	Arg 55	Ile	Суз	Leu	Leu	Суз 60	Val	Ile	Ser	Leu
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Leu	Val	Ser	Ile	Val 85	Asn	Val	Val	Trp	Thr 90	Phe	Ala	Asn	Asn	Ser 95	Ser
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Asn	Ile	Ser 115	His	Pro	Phe	Phe	Phe 120	Trp	Leu	Lys	Leu	Lys 125	Ile	Asn	Lys
Val	Met 130	Leu	Ala	Ile	Leu	Leu 135	Gly	Ser	Phe	Leu	Ile 140	Ser	Leu	Ile	Ile

Ser Val Pro Lys Asn Asp Asp Met Trp Tyr His Leu Phe Lys Val Ser

His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly

Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Val Met Val Pro Phe Ile

Leu Cys Leu Ile Ser Phe Phe Leu Leu Phe Ser Leu Val Arg His

Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr

Glu Ala His Met Arg Ala Ile Lys Ala Val Ile Ile Phe Leu Leu

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260

Ile Phe Pro Ser Ser His Ser Phe Ile Leu Ile Met Gly Asn Ser Lys 285

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ttg acc ata ggg att tgg gga aat gga ttc att gta cta gtt aac Leu Thr Ile Gly Ile Trp Gly Asn Gly Phe Ile Val Leu Val Asn 20 25	Суз
att gac tgg ctc aaa aga aga gat att tcc ttg att gac atc atc Ile Asp Trp Leu Lys Arg Arg Asp Ile Ser Leu Ile Asp Ile Ile	Leu
atc agc ttg gcc atc tcc aga atc tgt ctg ctg tgt gta ata tca Ile Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Ser 50 55 60	Leu
gat ggc ttc ttt atg ctg ctc ttt cca ggt aca tat ggc aat agc Asp Gly Phe Phe Met Leu Leu Phe Pro Gly Thr Tyr Gly Asn Ser 65 70 75	Val
Leu Val Ser Ile Val Asn Val Val Trp Thr Phe Ala Asn Asn Ser :	agt 288 Ser
Leu Trp Phe Thr Ser Cys Leu Ser Ile Phe Tyr Leu Leu Lys Ile F 100	Ala
aat ata tcg cac cca ttt ttc ttc tgg ctg aag cta aag atc aac a Asn Ile Ser His Pro Phe Phe Phe Trp Leu Lys Leu Lys Ile Asn I 115 120	γλε
gtc atg ctt gcg att ctt ctg ggg tcc ttt ctt atc tct tta att a Val Met Leu Ala Ile Leu Leu Gly Ser Phe Leu Ile Ser Leu Ile I 130 135 140	tt 432 le
agt gtt cca aag aat gat gat atg tgg tat cac ctt ttc aaa gtc a Ser Val Pro Lys Asn Asp Asp Met Trp Tyr His Leu Phe Lys Val S 150	er
cat gaa gaa aac att act tgg aaa ttc aaa gtg agt aaa att cca gg His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gl	60 gt 528 ly
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gag gcc cac atg agg gcc ata aag gca gtg atc atc ttt ctg ctc ctc Glu Ala His Met Arg Ala Ile Lys Ala Val Ile Ile Phe Leu Leu Leu 235	ū
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		275	tca Ser	DCI	nrs	ser	280	тте	Leu	Ile	Met	Gly 285	Asn	Ser	Lys	864
ttg Leu	agg Arg 290	gaa Glu	gct Ala	ttt Phe	ctg Leu	aag Lys 295	atg Met	tta Leu	aga Arg	ttt Phe	gtg Val 300	aag Lys	tgt Cys	ttc Phe	ctt Leu	912
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- His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly 165 170 175
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- Glu Ala His Met Arg Ala Ile Lys Thr Val Ile Ile Phe Leu Leu 225 230 235 240
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Leu	Trp	Phe	Thr 100	Ser	Cys	Leu	Ser	Ile 105	Phe	Tyr	Leu	Leu	Lys 110	Ile	Ala		
Asn	Ile	Ser 115	His	Pro	Phe	Phe	Phe 120	Trp	Leu	Lys	Leu	Lys 125	Ile	Asn	Lys		

Val Met Leu Ala Ile Leu Leu Gly Ser Phe Leu Ile Ser Leu Ile Ile

130 135 140

Ser Val Pro Lys Asn Glu Asp Met Trp Tyr His Leu Phe Lys Val Ser

His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly 170

Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Val Met Val Pro Phe Ile

Leu Cys Leu Ile Ser Phe Phe Leu Leu Phe Ser Leu Val Arg His

Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr 220

Glu Ala His Met Arg Ala Ile Lys Ala Val Ile Ile Phe Leu Leu 235

Leu Ile Val Tyr Tyr Pro Val Phe Leu Val Met Thr Ser Ser Ala Leu 245 250

Ile Pro Gln Gly Lys Leu Val Leu Met Ile Gly Asp Ile Val Thr Val

Ile Phe Pro Ser Ser His Ser Phe Ile Leu Ile Met Gly Asn Ser Lys 280

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Ile	e Asp	Trp 35) Let	ı Lys	8 Arg	J Arg	y Asp 40) Ile	Sei	c Lei	ı Ile	e Asp 45	o Ile	∍ Ile	e Leu
Ile	Ser 50	Let	ı Ala	ı Ile	Ser	Arg 55	, Ile	Cys	Leu	ı Leı	2 Cys 60	3 Val	L Il∈	e Ser	Leu
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Leu	Val	Ser	lle	Val 85	Asn	Val	Val	T _. rp	Thr 90	' Phe	· Ala	Asn	Asn	Ser 95	Ser
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His	Glu	Glu	Asn	Ile 165	Thr	Trp	Lys	Phe	Lys 170	Val	Ser	Lys	Ile	Pro 175	Gly
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Asp Gl ₃ 65	/ Leu	Phe	Met	Leu 70	Lev	ı Ph	e Pi	ro (Gly	Thr 75	ТУ	r Gly	y As	sn S		al O
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Asn Ile	Ser 115	His	Pro	Phe	Phe	Phe 120	e Tr	p L	eu :	Lys	Leu	Lys 125	Il	e As	n Lj	/S

213/447

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His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly 165 170 175

Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Val Met Val Pro Phe Ile 180 185 190

Leu Cys Leu Ile Ser Phe Phe Leu Leu Phe Ser Leu Val Arg His

Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr 210 220

Glu Ala His Met Arg Ala Ile Lys Ala Val Ile Ile Phe Leu Leu 225 230 235 240

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85 90 95

Trp Phe Ala Thr Ser Leu Ser Ile Phe Tyr Phe Leu Lys Ile Ala Asn 100 105 110

Phe Ser Asn Tyr Ile Phe Leu Trp Leu Lys Ser Arg Thr Asn Met Val 115 120 125

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Val Trp Asp Leu Asn Met Tyr Lys Ser Glu Tyr Phe Ile Lys Gln Ile 165 170 175

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Cys Ile Phe Leu Ile Ile Ser Leu Trp Arg His Asn Arg Gln Met Gln
195 200 205

Ser Asn Val Thr Gly Leu Arg Asp Ser Asn Thr Glu Ala His Val Lys 210 220

Ala Met Lys Val Leu Ile Ser Phe Ile Ile Leu Phe Ile Leu Tyr Phe 225 230 235

Ile Gly Met Ala Ile Glu Ile Ser Cys Phe Thr Val Arg Glu Asn Lys 245 250 255

Leu Leu Leu Met Phe Gly Met Thr Thr Thr Ala Ile Tyr Pro Trp Gly 260 265 270

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atg cta cgt gta gtg gaa ggc atc ttc att ttt gtt gta gtt agt gag gag Met Leu Arg Val Val Glu Gly Ile Phe Ile Phe Ile Phe Val Val Val Val Val Ser Glu 15 tca gtg ttt ggg gtt ttg ggg aat Gly Phe Ile Gly Leu Val Asn Cys 25 att gac tgt gcc aag aat aag tta tct acg att ggc ttt att ctc acc Ile Asp Cys Ala Lys Asn Jeu 40 ggc tta gct att tca aga att ttc ctg ata tgg ata ata att aca gat Ile Ser Arg Ile Phe Leu Ile Trp Ile Ile Ile Ile Ile Thr Asp 60 gga ttt ata cag ata ttc tct cca aat ata tat gcc tcc ggt aac cta Gly Phe Ile Gln Ile Phe Ser Pro Asn Ile Tyr Ala Ser Gly Asn Leu 80 att gaa tat att agt tac ttt tgg gta att ggt aat caa tca agt atg Ile Glu Tyr Ile Ser Tyr Phe Trp Val Ile Gly Asn Gln Ser Ser Met 95 tgg ttt gcc acc agc ctc agc atc ttc tat ttc ctg aag ata gca aat Tyr Phe Leu Lys Ile Ala Asn	
tca gtg ttt ggg gtt ttg ggg aat gga ttt att gga ctt gta aac tgc Ser Val Phe Gly Val Leu Gly Asn Gly Phe Ile Gly Leu Val Asn Cys 30 att gac tgt gcc aag aat Leu Leu Ser Thr Ile Gly Phe Ile Gly Phe Ile Leu Thr 45 ggc tta gct att tca aga att ttt ctg ata ttg ata ata ata ata aca gat Ile Phe Ser Pro Asn Ile Tyr Ala Ser Gly Asn Leu Ser Ile Phe Ile Glu Tyr Ile Ser Tyr Phe Trp Val Ile Gly Asn Gln Ser Ser Met 90 tgg ttt gcc acc agc ctc agc atc ttc tat ttc ctg aag ata gca aat Ile Phe Tyr Phe Leu Lys Ile Ala Asn Ile Ile Ile Ile Ala Asn Ile	48
ggc tta gct att tca aga att ttt ctg ata tgg ata ata att aca gat Ser Hur IIe Gly Phe IIe Leu Thr 45 ggc tta gct att tca aga att ttt ctg ata tgg ata ata att aca gat Ser Ser Arg IIe Phe Leu IIe Trp IIe IIe IIe Thr Asp 60 gga ttt ata cag ata ttc tct cca aat ata tat gcc tcc ggt aac cta Ser Pro Asn IIe Tyr Ala Ser Gly Asn Leu 75 att gaa tat att agt tac ttt tgg gta att ggt aat caa tca agt atg IIe Glu Tyr IIe Ser Tyr Phe Trp Val IIe Gly Asn Gln Ser Ser Met 95 tgg ttt gcc acc agc ctc agc atc ttc tat ttc ctg aag ata gca aat Trp Phe Ala Thr Ser Leu Ser IIe Phe Tyr Phe Leu Lys IIe Ala Asn	96
gga ttt ata cag ata ttc tct cca aat ata tat gcc tcc ggt aac cta Gly Phe Ile Gln Ile Phe Ser Pro Asn Ile Tyr Ala Ser Gly Asn Leu 70 75 80 att gaa tat att agt tac ttt tgg gta att ggt aat caa tca agt atg Ile Glu Tyr Ile Ser Tyr Phe Trp Val Ile Gly Asn Gln Ser Ser Met 85 90 95 tgg ttt gcc acc agc ctc agc atc ttc tat ttc ctg aag ata gca aat Trp Phe Ala Thr Ser Leu Ser Ile Phe Tyr Phe Leu Lys Ile Ala Asn	144
att gaa tat att agt tac ttt tgg gta att ggt aat caa tca agt atg Ile Glu Tyr Ile Ser Tyr Phe Trp Val Ile Gly Asn Gln Ser Ser Met 85 90 95 tgg ttt gcc acc agc ctc agc atc ttc tat ttc ctg aag ata gca aat Trp Phe Ala Thr Ser Leu Ser Ile Phe Tyr Phe Leu Lys Ile Ala Asn	192
tgg ttt gcc acc agc ctc agc atc ttc tat ttc ctg aag ata gca aat Trp Phe Ala Thr Ser Leu Ser Ile Phe Tyr Phe Leu Lys Ile Ala Asn	240
100 105 Fine Leu Lys Ile Ala Asn	288
110	336
ttt tcc aac tac ata ttt ctc tgg ttg aag agc aga aca aat atg gtt Phe Ser Asn Tyr Ile Phe Leu Trp Leu Lys Ser Arg Thr Asn Met Val 115 120 125	384
ctt ccc ttc atg ata gta ttc tta ctt att tca tcg tta ctt aat ttt Leu Pro Phe Met Ile Val Phe Leu Leu Ile Ser Ser Leu Leu Asn Phe 130 135 140	432
gca tac att gcg aag att ctt aat gat tat aaa atg aag aat gac aca	480

	wo	2005	/00789	91											DCM/III.	
									218/4	147					PCT/US200	4/019489
										100					Thr 160	
gtc Val				165		_	•		170	TAT	rne	TTE	Lys	Gln 175	Ile	528
ttg Leu			180					185	- 116	THE	ьеи	Ser	Leu 190	Ile	Thr	576
tgt Cys	att Ile	ttt Phe	tta Leu	atc Ile	att Ile	tcc Ser	ctt Leu	tgg Trp	aga Arg	cac His	aac Asn	agg Arg	cag	atg Mot	Caa Cl-	624

Cys Ile Phe Leu Ile Ile Ser Leu Trp Arg His Asn Arg Gln Met Gln tcg aat gtg aca gga ttg aga gac tcc aac aca gaa gct cat gtg aag Ser Asn Val Thr Gly Leu Arg Asp Ser Asn Thr Glu Ala His Val Lys 672

220 gca atg aaa gtt ttg ata cct ttc atc atc ctc ttt atc ttg tat ttt Ala Met Lys Val Leu Ile Pro Phe Ile Ile Leu Phe Ile Leu Tyr Phe 720 235

ata ggc atg gcc ata gaa ata tca tgt ttt act gtg cga gaa aac aaa Ile Gly Met Ala Ile Glu Ile Ser Cys Phe Thr Val Arg Glu Asn Lys 768 250

ctg ctg ctt atg ttt gga atg aca acc aca gcc atc tat ccc tgg ggt Leu Leu Met Phe Gly Met Thr Thr Ala Ile Tyr Pro Trp Gly 816

cac tca ttt atc tta att cta gga aac agc aag cta aag caa gcc tct His Ser Phe Ile Leu Ile Leu Gly Asn Ser Lys Leu Lys Gln Ala Ser 864 280

ttg agg gta ctg cag caa ttg aag tgc tgt gag aaa agg aaa aat ctc Leu Arg Val Leu Gln Gln Leu Lys Cys Glu Lys Arg Lys Asn Leu 912

aga gtc aca tag Arg Val Thr 924 305

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<212> PRT

<213> homo sapiens

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Ser Val Phe Gly Val Leu Gly Asn Gly Phe Ile Gly Leu Val Asn Cys

Ile Asp Cys Ala Lys Asn Lys Leu Ser Thr Ile Gly Phe Ile Leu Thr

Gly	Leu 50	Ala	Ile	Ser	Arg	Ile 55	Phe	Leu	Ile	Trp	Ile 60	Ile	Ile	Thr	Asp
Gly 65	Phe	Ile	Gln	Ile	Phe 70	Ser	Pro	Asn	Ile	Tyr 75	Ala	Ser	Gly	Asn	Leu 80
Ile	Glu	Tyr	Ile	Ser 85	Tyr	Phe	Trp	Val	Ile 90	Gly	Asn	Gln	Ser	Ser 95	Met
Trp	Phe	Ala	Thr 100	Ser	Leu	Ser	Ile	Phe 105	Tyr	Phe	Leu	Lys	Ile 110	Ala	Asn
Phe	Ser	Asn 115	Tyr	Ile	Phe	Leu	Trp 120	Leu	Lys	Ser	Arg	Thr 125	Asn	Met	Val
Leu	Pro 130	Phe	Met	Ile	Val	Phe 135	Leu	Leu	Ile	Ser	Ser 140	Leu	Leu	Asn	Phe
Ala 145	Tyr	Ile	Ala	Lys	Ile 150	Leu	Asn	Asp	Tyr	Lys 155	Met	Lys	Asn	Asp	Thr 160
Val	Trp	Asp	Leu	Asn 165	Met	Tyr	Lys	Ser	Glu 170	Tyr	Phe	Ile	Lys	Gln 175	Ile
Leu	Leu	Asn	Leu 180	Gly	Val	Ile	Phe	Phe 185	Phe	Thr	Leu	Ser	Leu 190	Ile	Thr
Cys	Ile	Phe 195	Leu	Ile	Ile	Ser	Leu 200	Trp	Arg	His	Asn	Arg 205	Gln	Met	Gln
Ser	Asn 210	Val	Thr	Gly	Leu	Arg 215	Asp	Ser	Asn	Thr	Glu 220	Ala	His	Val	Lys
Ala 225	Met	Lys	Val	Leu	Ile 230	Pro	Phe	Ile	Ile	Leu 235	Phe	Ile	Leu	Tyr	Phe 240
Ile	Gly	Met	Ala	Ile 245	Glu	Ile	Ser	Суз	Phe 250	Thr	Val	Arg	Glu	Asn 255	Lys
Leu	Leu	Leu	Met 260	Phe	Gly	Met	Thr	Thr 265	Thr	Ala	Ile	Tyr	Pro 270	Trp	Gly
His	Ser	Phe 275	Ile -	Leu	Ile	Leu	Gly 280	Asn	Ser	Lys	Leu	Lys 285	Gln	Ala	Ser

Leu Arg Val Leu Gln Gln Leu Lys Cys Cys Glu Lys Arg Lys Asn Leu 290 295 300

	300	
Arg Val Thr 305		
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20	gg aat gga ttt att gga ctt gta aac tgc ly Asn Gly Phe Ile Gly Leu Val Asn Cys 25 30	96
35	ag tta tct acg att ggc ttt att ctc acc vs Leu Ser Thr Ile Gly Phe Ile Leu Thr 40 45	144
55	t ttt ctg ata tgg ata ata att aca gat e Phe Leu Ile Trp Ile Ile Ile Thr Asp 60	192
70	t cca aat ata tat gcc tcc ggt aac cta r Pro Asn Ile Tyr Ala Ser Gly Asn Leu 75 80	240
85	t tgg gta att ggt aat caa tca agt atg e Trp Val Ile Gly Asn Gln Ser Ser Met 90 95	288
100	c atc ttc tat ttc ctg aag ata gca aat c Ile Phe Tyr Phe Leu Lys Ile Ala Asn 105	336
ttt tcc aac tac ata ttt ctc	tgg ttg aag agc aga aca aat atg gtt	384

										1/447						0.52004/019
								_				12:	5		t Val	
	130					135	5			3 DE.	140) Let	ı Leu	ı Asr	ttt Phe	432
145					150)			- 1 Y 1	15	a met	тЛя	3 Asn	Asp	aca Thr	480
				165		-	-		170	, TAT	Pne	TTE	Thr	Gln 175	att	528
			180					185	- 110	****	cta Leu	ser	ьеи 190	Ile	Thr	576
		195					200		9	1125		Arg 205	GIn	Met	Gln	624
tcg : Ser :	210					215			11011	1111	220	ATa	His	Val	Lys	672
gca a Ala M 225					230			++C	116	235	Pne	Ile	Leu	Tyr	Phe 240	720
ata o Ile G				245				-,0	250	1111	val	Arg	GLu	Asn 255	Lys	768
ctg c Leu I			260		_			265		nta	тте	Tyr	Pro 270	Trp	Gly	816
cac t His S	2	275					280		Der	пуз	ьeu .	ьуs 285	Gln .	Ala	Ser	864
ttg a Leu A 2	90			cag (Sln (caa Gln :	ttg Leu 295	aag Lys	tgc Cys	tgt Cys	gag Glu	aaa a Lys 1 300	agg Arg	aaa a Lys i	aat Asn :	ctc Leu	912
aga g Arg Va 305	tc a al T	ca t	ag													924
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Met Le	u A	ra V	al V	al G	1111 0	·1 ~	. 7									

Met Leu Arg Val Val Glu Gly Ile Phe Ile Phe Val Val Val Ser Glu 1 5 10 15

Ser	Val	Phe	Gly 20	Val	Leu	Gly	Asn	Gly 25	Phe	Ile	Gly	Leu	Val 30	Asn	Суз
Ile	Asp	Cys 35	Ala	Lys	Asn	Lys	Leu 40	Ser	Thr	Ile	Gly	Phe 45	Ile	Leu	Thr
Gly	Leu 50	Ala	Ile	Ser	Arg	Ile 55	Phe	Leu	Ile	Trp	Ile 60	Ile	Ile	Thr	Asp
Gly 65	Phe	Ile	Gln	Ile	Phe 70	Ser	Pro	Asn	Ile	Tyr 75	Ala	Ser	Gly	Asn	Leu 80
Ile	Glu	Tyr	Ile	Ser 85	Tyr	Phe	Trp	Val	Ile 90	Gly	Asn	Gln	Ser	Ser 95	Met
Trp	Phe	Ala	Thr 100	Ser	Leu	Ser	Ile	Phe 105	Tyr	Phe	Leu	Lys	Ile 110	Ala	Asn
Phe	Ser	Asn 115	Tyr	Ile	Phe	Leu	Trp 120	Leu	Lys	Ser	Arg	Thr 125	Asn	Met	Val
Leu	Pro 130	Phe	Met	Ile	Val	Phe 135	Leu	Leu	Ile	Ser	Ser 140	Leu	Leu	Asn	Phe
Ala 145	Tyr	Ile	Ala	ГÀЗ	Ile 150	Leu	Asn	Asp	Tyr	Lys 155	Met	Lys	Asn	Asp	Thr 160
Val	Trp	Asp	Leu	Asn 165	Met	Tyr	Lys	Ser	Glu 170	Туг	Phe	Ile	Thr	Gln 175	Ile
Leu	Leu	Asn	Leu 180	Gly	Val	Ile	Phe	Phe 185	Phe	Thr	Leu	Ser	Ļец 190	Ile	Thr
Cys	Ile	Phe 195	Leu	Ile	Ile	Ser	Leu 200	Trp	Arg	His	Asn	Arg 205	Gln	Met	Gln
Ser	Asn 210	Val	Thr	Gly	Leu	Arg 215	Asp	Ser	Asn	Thr	Glu 220	Ala	His	Val	Lys
Ala 225	Met	Lys	Val	Leu	Ile 230	Ser	Phe	Ile	Ile	Leu 235	Phe	Ile	Leu	Tyr	Phe 240
Ile	Gly	Met	Ala	Ile 245	Glu	Ile	Ser	Cys	Phe 250	Thr	Val	Arg	Glu	Asn 255	Lys

Leu Leu Met Phe Gly Met Thr Thr Thr Ala Ile Tyr Pro Trp Gly 265

His Ser Phe Ile Leu Ile Leu Gly Asn Ser Lys Leu Lys Gln Ala Ser

Leu Arg Val Leu Gln Gln Leu Lys Cys Cys Glu Lys Arg Lys Asn Leu 295

Arg Val Thr 305

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<220>

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<223> SNP

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tca gtg ttt ggg gtt ttg ggg aat gga ttt att gga ctt gta aac tgc 96 Ser Val Phe Gly Val Leu Gly Asn Gly Phe Ile Gly Leu Val Asn Cys 20

att gac tgt gcc aag aat aag tta tct acg att ggc ttt att ctc acc 144 Ile Asp Cys Ala Lys Asn Lys Leu Ser Thr Ile Gly Phe Ile Leu Thr 35

ggc tta gct att tca aga att ttt ctg ata tgg ata ata att aca gat 192 Gly Leu Ala Ile Ser Arg Ile Phe Leu Ile Trp Ile Ile Ile Thr Asp 50

gga ttt ata cag ata ttc tct cca aat ata tat gcc tcc ggt aac cta 240 Gly Phe Ile Gln Ile Phe Ser Pro Asn Ile Tyr Ala Ser Gly Asn Leu

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65					70					75					80	
				85	4		1-	, vai	90	: GTZ	y Asr	ı Glr	ı Ser	: Sei 95	atg Met	288
			100)				105	Tyr	Pne	e Leu	ı Lys	11e	Ala)	a aat a Asn	336
		115	_				120	neu	пуs	s ser	Arg	125	Asn	Met	gtt Val	38,4
	130	ı				135	ьęц	пеп	тте	Ser	Ser 140	Leu	Leu	Asn	ttt Phe	432
145				-1-	150		NSII	Азр	Tyr	ьуs 155	Thr	Lys	Asn	Asp	aca Thr 160	480
	_	•		165		tat Tyr	цуѕ	ser	170	Tyr	Phe	Ile	Lys	Gln 175	Ile	528
			180	1		att Ile	rne	185	Pne	Thr	Leu	Ser	Leu 190	Ile	Thr	576
		195				tcc Ser	200	пр	Arg	HIS	Asn	Arg 205	Gln	Met	Gln	624
	210			1		aga Arg 215	rsp	ser	Asn	Tnr	G1u 220	Ala	His	Val	Lys	672
225		-			230	tct Ser	riie	тте	тте	ьеи 235	Phe	Ile	Leu	Tyr	Phe 240	720
				245		ata Ile	per	СУЗ	250	Tnr	Val	Arg	Glu	Asn 255	Lys	768
			260		U _J	atg Met	1111	265	Inr	Ala	Ile	Tyr	Pro 270	Trp	Gly	816
		275					280	ASII	ser	гла	Leu	Lys 285	Gln	Ala	Ser	864
ttg Leu	agg Arg 290	gta Val	ctg Leu	cag Gln		ttg Leu 295	aag Lys	tgc Cys	tgt Cys	gag Glu	aaa Lys 300	agg Arg	aaa Lys	aat Asn	ctc Leu	912
aga Arg 305	gtc Val	aca Thr	tag													924

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Ile Asp Cys Ala Lys Asn Lys Leu Ser Thr Ile Gly Phe Ile Leu Thr 35 40 45

Gly Leu Ala Ile Ser Arg Ile Phe Leu Ile Trp Ile Ile Ile Thr Asp 50 55 60

Gly Phe Ile Gln Ile Phe Ser Pro Asn Ile Tyr Ala Ser Gly Asn Leu 70 75 80

Ile Glu Tyr Ile Ser Tyr Phe Trp Val Ile Gly Asn Gln Ser Ser Met 85 90 95

Trp Phe Ala Thr Ser Leu Ser Ile Phe Tyr Phe Leu Lys Ile Ala Asn 100 105 110

Phe Ser Asn Tyr Ile Phe Leu Trp Leu Lys Ser Arg Thr Asn Met Val 115 120 125

Leu Pro Phe Met Ile Val Phe Leu Leu Ile Ser Ser Leu Leu Asn Phe 130 135 140

Ala Tyr Ile Ala Lys Ile Leu Asn Asp Tyr Lys Thr Lys Asn Asp Thr 145 150 155 160

Val Trp Asp Leu Asn Met Tyr Lys Ser Glu Tyr Phe Ile Lys Gln Ile 165 170 175

Leu Leu Asn Leu Gly Val Ile Phe Phe Phe Thr Leu Ser Leu Ile Thr 180 185 185

Cys Ile Phe Leu Ile Ile Ser Leu Trp Arg His Asn Arg Gln Met Gln
195 200 205

										/447						
Ser	Asn 210	Val	. Thi	Gl;	y Let	1 Arç 215	J Asp	Se:	r Ası	n Thi	r Gli 220	ı Al	a Hi	s Va	l Lys	
Ala 225	Met	Lys	Va]	L Lei	ı Ile 230	e Ser	Phe	e Ile	e Ile	≥ Let 235	ı Phe	e Il	e Leı	л Ту	r Phe 240	
Ile	Gly	Met	Ala	11e 245	∋ Glu 5	ı Ile	: Ser	· Cys	Phe 250	∍ Thr)	· Val	Ar	g Glı	1 Ası 25:	n Lys 5	
Leu	Leu	Leu	Met 260	: Phe	e Gly	Met	Thr	Thr 265	Thr	Ala	ı Ile	ту:	c, Pro 270		o Gly	
His	Ser	Phe 275	Ile	Leu	ı Ile	Leu	Gly 280	Asn	ser	: Lys	Leu	Lys 285	Glr	a Ala	a Ser	
Leu	Arg 290	Val	Leu	Gln	Gln	Leu 295	Lys	C y s	Cys	Glu	Lys 300	Arg	, Lys	Asr	ı Leu	
Arg 305	Val	Thr						i								
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<220 <221 <222 <223	> v > (ntion													
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ttc a	lle	att Ile	ggg G1y 20	aat Asn	ttg Leu	agc Ser	aat Asn	gga Gly 25	ttt Phe	ata Ile	gta Val	ctg Leu	atc Ile 30	aac Asn	tgc Cys	96
att o	_	tgg Irp 35	gtc Val	agt Ser	aaa Lys	9	gag Glu 40	ctg Leu	tcc Ser	tca Ser	gtc Val	gat Asp 45	aaa Lys	ctc Leu	ctc Leu	144
att a Ile I 5	itc i le 1	ttg Leu .	gca Ala	atc Ile	001	aga Arg 55	att Ile	GJÀ āāā	ctg Leu	atc Ile	tgg Trp 60	gaa Glu	ata Ile	tta Leu	gta Val	192
agt t	gg t	tt ·	tta	gct	ctg	cat	tat	cta	gcc	ata	ttt	gtg	tct	gga	aca	240

	227/447
	~~ // ~~ /

										15					y Thr 80	
			-	85		,	, 501	. ++1	90	· val	l Sei	r Ası	n His	95 Phe	c aat e Asn	288
			100)				105	FILE	тут	: Let	ı Leı	1 Lys 110	3 Ile)	a gcg e Ala	336
		115	5	•			120	ı TYT	neu	гλε	rrp	125	y Val	. Asr	aaa Lys	384
	130					135	GLY	TIIT	теп	vaı	. Phe 140	: Leu	ı Phe	: Let	aat Asn	432
145					150		116	пур	Asp	155	ь ьеи	Asp	Arg	Tyr	gaa Glu 160	480
				165		2110	per	Mec	170	Asp	Phe	Glu	Thr	Phe 175		528
			180			1100	1111	185	Pne	Ser	Leu	Thr	Pro 190	Phe	act Thr	576
		195				L cu	200	пец	тте	Pne	Ser	Leu 205	Gln	Lys	His	624
ctc Leu	cag Gln 210	aaa Lys	atg Met	caa Gln	ctc Leu	aat Asn 215	tac Tyr	aaa Lys	gga Gly	cac His	aga Arg 220	gac Asp	ccc Pro	agg Arg	acc Thr	672
aag Lys 225	gtc Val	cat His	aca Thr	aat Asn	gcc Ala 230		aaa Lys	att Ile	gtg Val	atc Ile 235	tca Ser	ttc Phe	ctt Leu	tta Leu	ttc Phe 240	720
			ttc Phe	245	200	Cys	val	neu	250	Ser	Trp	Ile	Ser	Glu 255	Leu	768
tat Tyr	cag Gln	aac Asn	aca Thr 260	gtg Val	atc Ile	tac Tyr	1100	ctt Leu 265	tgt Cys	gag Glu	acg Thr	att Ile	gga Gly 270	gtc Val	ttc Phe	816
		275	agc Ser			- 110	280	neu	тте	Leu	СΙΆ	Asn 285	Ala	Lys	Leu	864
	cag Gln 290	gcc Ala	ttt Phe	ctt Leu		gtg Val 295	gca Ala	gct Ala	aag Lys	vaı	tgg Trp 300	gct Ala	aaa Lys	cga Arg	tga	912

<210> 134

<211> 303

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<213> homo sapiens

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Phe Ile Ile Gly Asn Leu Ser Asn Gly Phe Ile Val Leu Ile Asn Cys 25 30

Ile Asp Trp Val Ser Lys Arg Glu Leu Ser Ser Val Asp Lys Leu Leu 35 40 45

Ile Ile Leu Ala Ile Ser Arg Ile Gly Leu Ile Trp Glu Ile Leu Val 50 60

Ser Trp Phe Leu Ala Leu His Tyr Leu Ala Ile Phe Val Ser Gly Thr 75 80

Gly Leu Arg Ile Met Ile Phe Ser Trp Ile Val Ser Asn His Phe Asn 85 90 95

Leu Trp Leu Ala Thr Ile Phe Ser Ile Phe Tyr Leu Leu Lys Ile Ala 100 105 110

Ser Phe Ser Ser Pro Ala Phe Leu Tyr Leu Lys Trp Arg Val Asn Lys 115 120 125

Val Ile Leu Met Ile Leu Leu Gly Thr Leu Val Phe Leu Phe Leu Asn 130 135 140

Leu Ile Gln Ile Asn Met His Ile Lys Asp Trp Leu Asp Arg Tyr Glu 145 150 155 160

Arg Asn Thr Thr Trp Asn Phe Ser Met Ser Asp Phe Glu Thr Phe Ser 165 170 175

Val Ser Val Lys Phe Thr Met Thr Met Phe Ser Leu Thr Pro Phe Thr 180 185 190

Val Ala Phe Ile Ser Phe Leu Leu Leu Ile Phe Ser Leu Gln Lys His 195 200 205

Leu Gln Lys Met Gln Leu Asn Tyr Lys Gly His Arg Asp Pro Arg Thr 210 215 220

Lys Val 225	His Th	Asn Al 23	a Leu O	Ļys	Ile	Val	. Ile 235	e Ser	Phe	e Leu	ı Leı	Phe 240	
Tyr Ala	Ser Phe	Phe Le 245	u Cys	Val	Leu	Ile 250	Ser	Trp	Ile	: Ser	Glu 255		
Tyr Gln	Asn Thr 260	Val Il	e Tyr	Met	Leu 265	Cys	Glu	Thr	Ile	Gly 270	' Val	Phe	
Ser Pro	Ser Ser 275	His Se	c Phe	Leu 280	Leu	Ile	Leu	Gly	Asn 285	Ala	Lys	Leu	
Arg Gln 290	Ala Phe	Leu Le	val 295	Ala	Ala	Lys	Val	Trp 300	Ala	Lys	Arg	ī	
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	os L)(91	2)											
	ariatio: 776)(NP												
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ttc ata a Phe Ile I	tt ggg le Gly 20	aat ttg Asn Leu	agc a	<i>d</i> 211 /	gga Gly 25	ttt Phe	ata Ile	gta Val	ctg Leu	atc Ile 30	aac Asn	tgc Cys	96
att gac t Ile Asp T 3	gg gtc rp Val 5	agt aaa Ser Lys	mrg (gag (Glu 1 40	ctg Leu	tcc Ser	tca Ser	gtc Val	gat Asp 45	aaa Lys	ctc Leu	ctc Leu	144
att atc t Ile Ile L 50	tg gca eu Ala	atc tcc Ile Ser	aga a Arg 1 55	att (Ile (gly ggg	ctg Leu	atc Ile	tgg Trp 60	gaa Glu	ata Ile	tta Leu	gta Val	192
agt tgg t Ser Trp P 65		70	1110 1	rĀT 1	beu ,	Ата	75 75	Phe	Val	Ser	Gly	Thr 80	240
gga tta a Gly Leu A	_	atg att Met Ile 85	ttt a	agc t Ser 1	цр.	ata Ile ' 90	gtt Val	tct Ser	aat Asn	His	ttc Phe 95	aat Asn	288

	•		100			1116	ser	105	Pne	Tyr	Leu	ı Leu	Lys 110	Ile	gcg Ala	336
		115					12,0	TÀT	Leu	гÀз	Trp	125	' Val	Asn	aaa Lys	384
	130					135	GLY	1111	теп	vaı	140	Leu	Phe	Leu	aat Asn	432
145					150	*****	116	пås	Asp	155	ьeu	Asp	Arg	Tyr	gaa Glu 160	480
_				165		1116	per	Met	170	Asp	Pne	Glu	Thr	Phe 175	tca Ser	528
			180		1111	Mec	TILL	185	Pne	Ser	Leu	Thr	Pro 190	Phe	act Thr	576
		195	atc Ile	301	1110	neu	200	ьец	тте	Phe	Ser	Leu 205	Gln	Lys	His	624
	210	3 -	atg Met		LCu	215	ıyı	туѕ	стА	Hls	Arg 220	Asp	Pro	Arg	Thr	672
225			aca Thr	-1011	230	пец	пур	TTE	vaı	235	Ser	Phe	Leu	Leu	Phe 240	720
_			ttc Phe	245	пец	Суѕ	νат	ьеи	250	Ser	Trp	Ile	Ser	Glu 255	Leu	768
_			aca Thr 260	· u _	116	TYL	Met	265	Суѕ	GLu	Thr	Ile	Gly 270	Val	Phe	816
		275	agc Ser		CCI	1116	280	ъеп	тте	ьeu	GТĀ	Asn 285	Ala	Lys	Leu	864
aga Arg	cag Gln 290	gcc Ala	ttt Phe	ctt Leu	LCU	gtg Val 295	gca Ala	gct Ala	aag Lys	gta Val	tgg Trp 300	gct Ala	aaa Lys	cga Arg	tga	912
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Phe Ile Ile Gly Asn Leu Ser Asn Gly Phe Ile Val Leu Ile Asn Cys 20 25 30

Ile Asp Trp Val Ser Lys Arg Glu Leu Ser Ser Val Asp Lys Leu Leu 35 40 45

Ile Ile Leu Ala Ile Ser Arg Ile Gly Leu Ile Trp Glu Ile Leu Val 50 55 60

Ser Trp Phe Leu Ala Leu His Tyr Leu Ala Ile Phe Val Ser Gly Thr 70 75 80

Gly Leu Arg Ile Met Ile Phe Ser Trp Ile Val Ser Asn His Phe Asn 85 90 95

Leu Trp Leu Ala Thr Ile Phe Ser Ile Phe Tyr Leu Leu Lys Ile Ala 100 105 110

Ser Phe Ser Ser Pro Ala Phe Leu Tyr Leu Lys Trp Arg Val Asn Lys 115 120 125

Val Ile Leu Met Ile Leu Leu Gly Thr Leu Val Phe Leu Phe Leu Asn 130 135 140

Leu Ile Gln Ile Asn Met His Ile Lys Asp Trp Leu Asp Arg Tyr Glu 145 150 155 160

Arg Asn Thr Trp Asn Phe Ser Met Ser Asp Phe Glu Thr Phe Ser 165 170 175

Val Ser Val Lys Phe Thr Met Thr Met Phe Ser Leu Thr Pro Phe Thr 180 185 190

Val Ala Phe Ile Ser Phe Leu Leu Leu Ile Phe Ser Leu Gln Lys His 195 200 205

Leu Gln Lys Met Gln Leu Asn Tyr Lys Gly His Arg Asp Pro Arg Thr 210 215 220

Lys Val His Thr Asn Ala Leu Lys Ile Val Ile Ser Phe Leu Leu Phe 225 230 235 240

Tyr Ala Ser Phe Phe Leu Cys Val Leu Ile Ser Trp Ile Ser Glu Leu 245 250 255

Tyr Gln Ser Thr Val Ile Tyr Met Leu Cys Glu Thr Ile Gly Val Phe 260 265 270	
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Arg Gln Ala Phe Leu Leu Val Ala Ala Lys Val Trp Ala Lys Arg 290 295 300	
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ttt ata att gga aat tta gga aat agt ttc ata gca ctg gtg aac tgt Phe Ile Ile Gly Asn Leu Gly Asn Ser Phe Ile Ala Leu Val Asn Cys 20 25 30	96
att gac tgg gtc aag gga aga aag atc tct tcg gtt gat cgg atc ctc Ile Asp Trp Val Lys Gly Arg Lys Ile Ser Ser Val Asp Arg Ile Leu 40 45	96
att gac tgg gtc aag gga aga aag atc tct tcg gtt gat cgg atc ctc Ile Asp Trp Val Lys Gly Arg Lys Ile Ser Ser Val Asp Arg Ile Leu act gct ttg gca atc tct cga att agc ctg gtt tgg tta ata ttc gga Thr Ala Leu Ala Ile Ser Arg Ile Ser Leu Val Trp Leu Ile Phe Gly 50	
att gac tgg gtc aag gga aga aag atc tct tcg gtt gat cgg atc ctc Ile Asp Trp Val Lys Gly Arg Lys Ile Ser Ser Val Asp Arg Ile Leu act gct ttg gca atc tct cga att agc ctg gtt tgg tta ata ttc gga Thr Ala Leu Ala Ile Ser Arg Ile Ser Leu Val Trp Leu Ile Phe Gly 50 agc tgg tgt gtg tct gtg ttt ttc cca gct tta ttt gcc act gaa aaa Ser Trp Cys Val Ser Val Phe Phe Pro Ala Leu Phe Ala Thr Glu Lys 70 25 26 27 28 28 28 28 28 28 28 28 29 20 21 25 30 Asn Cys 30 Asn Cys 30 Asn Cys 30 Arg Ile Leu Als Leu Asp Arg Ile Leu Als Ile Ser Val Asp Arg Ile Leu Als Ile Ser Val Trp Leu Ile Phe Gly Als Trp Leu Ala Thr Glu Lys 75 80	144
att gac tgg gtc aag gga aga aag atc tct tcg gtt gat cgg atc ctc Ile Asp Trp Val Lys Gly Arg Lys Ile Ser Ser Val Asp Arg Ile Leu 35 40 45 act gct ttg gca atc tct cga att agc ctg gtt tgg tta ata ttc gga Thr Ala Leu Ala Ile Ser Arg Ile Ser Leu Val Trp Leu Ile Phe Gly 50 55 60 agc tgg tgt gtg tct gtg ttt ttc cca gct tta ttt gcc act gaa aaa Ser Trp Cys Val Ser Val Phe Phe Pro Ala Leu Phe Ala Thr Glu Lys	144 192

	233/44/	
100	105	1.

			100					105					110			
		115	ŀ				120)	nec	гъйз	rrp	25 Arg	Val	Lys	a aag B Lys	384
	130)				135	, ,,,,	. 1111	261	val	140	: Leu	Phe	Leu	aat Asn	432
145					150	0	110	. Well	WI9	155	TTE	Asņ	Gly	Tyr	aga Arg 160	480
				165		001	1100	per	170	Asn	Phe	Thr	Arg	Phe 175	tcc Ser	528
			180		****	Der	TIIT	185	Pne	TT6	Phe	Ile	Pro 190	Phe	act Thr	576
		195				Lou	200	neu	тте	rne	Ser	atg Met 205	Trp	Lys	His	624
cgc Arg	aag Lys 210	aag Lys	atg Met	cag Gln	cac His	act Thr 215	gtc Val	aaa Lys	ata Ile	tcc Ser	gga Gly 220	gac Asp	gcc Ala	agc Ser	acc Thr	672
225			,	1	230	Lys	261	vaı	TTE	235	Phe	ttc Phe	Leu	Leu	Tyr 240	720
				245	201	1116	rne	TTE	250	val	Trp	acc Thr	Ser	Glu 255	Arg	768
ttg Leu			260				10u	265	GTII	vaı	Met	Gly	Met 270	Ala	Tyr	816
		275					280			CLY	11011	285	туѕ	ьеи	Arg	864
cag Gln	290					295	neu.	ııp	neu	Arg	300	Met	Phe	aaa Lys	gat Asp	912
302 GJA aaa	gag. Glu	ccc Pro	tca Ser	ggt Gly	cac His 310	aaa Lys	gaa Glu	ttt Phe	Arg	gaa Glu 315	tca Ser	tct Ser	tga			954

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<212> PRT <213> homo sapiens

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Thr Ala Leu Ala Ile Ser Arg Ile Ser Leu Val Trp Leu Ile Phe Gly

Ser Trp Cys Val Ser Val Phe Phe Pro Ala Leu Phe Ala Thr Glu Lys

Met Phe Arg Met Leu Thr Asn Ile Trp Thr Val Ile Asn His Phe Ser 90

Val Trp Leu Ala Thr Gly Leu Gly Thr Phe Tyr Phe Leu Lys Ile Ala 105

Asn Phe Ser Asn Ser Ile Phe Leu Tyr Leu Lys Trp Arg Val Lys

Val Val Leu Val Leu Leu Val Thr Ser Val Phe Leu Phe Leu Asn 140

Ile Ala Leu Ile Asn Ile His Ile Asn Ala Ser Ile Asn Gly Tyr Arg

Arg Asn Lys Thr Cys Ser Ser Asp Ser Ser Asn Phe Thr Arg Phe Ser

Ser Leu Ile Val Leu Thr Ser Thr Val Phe Ile Phe Ile Pro Phe Thr 185 190

Leu Ser Leu Ala Met Phe Leu Leu Leu Ile Phe Ser Met Trp Lys His

Arg Lys Lys Met Gln His Thr Val Lys Ile Ser Gly Asp Ala Ser Thr

Lys Ala His Arg Gly Val Lys Ser Val Ile Thr Phe Phe Leu Leu Tyr 235

				_					235	/447					PCI	7US2004/01
Al	a Il	e Ph	e Se	r Lei 24!	u Sei 5	Phe	∋ Phe	e Ile		r Vai	l Tr	p Th	r Se	r Gl 25	u Arg 5	
Le	u Gl	u Gli	u Ası 26(ı Lei	ı Ile	: Ile	e Lei	1 Se 265	c Gl	n Val	l Me	t Gly	y Mer 27	t Al	a Tyr	
Pro	o Sei	r Cys 275	s His	Sei	c Cys	Val	Leu 280	ı Ile	e Lei	ı Gl <u>y</u>	/ Ası	n Lys 285	s Lys	s Le	u Arg	
Glr	290	a Ser	. Leu	Ser	Val	Leu 295	Leu i	ı Trp	Let	ı Arç	ту: 300	r Met	: Phe	e Ly	s Asp	
Gl <u>y</u> 305	/ Glu	ı Pro	Ser	Gly	7 His 310	Lys	Glu	ı Phe	Arç	g Glu 315		: Ser	;			
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att Ile	gac Asp	tgg Trp 35	gtc Val	aag Lys	gga Gly	aga Arg	aag Lys 40	atc Ile	tct Ser	tcg Ser	gtt Val	gat Asp 45	cgg Arg	atc Ile	ctc Leu	144
act Thr	gct Ala 50	ttg Leu	gca Ala	atc Ile	tct Ser	cga Arg 55	att Ile	agc Ser	ctg Leu	gtt Val	tgg Trp 60	tta Leu	ata Ile	ttc Phe	gga Gly	192
agc Ser 65	tgg Trp	tgt Cys	gtg Val	tct Ser	gtg Val 70	ttt Phe	ttc Phe	cca Pro	gct Ala	tta Leu 75	ttt Phe	gcc Ala	act Thr	gaa Glu	aaa Lys 80	240

236/447	PCT/US2004/0194
atg ttc aga atg ctt act aat atc tgg aca gtg atc aat cat t Met Phe Arg Met Leu Thr Asn Ile Trp Thr Val Ile Asn His E 85	Phe Ser
gtc tgg tta gct aca ggc ctc ggt act ttt tat ttt ctc aag a Val Trp Leu Ala Thr Gly Leu Gly Thr Phe Tyr Phe Leu Lys I 100 105 110	le Ala
aat ttt tct aac tct att ttt ctc tac cta aag tgg agg gtt a Asn Phe Ser Asn Ser Ile Phe Leu Tyr Leu Lys Trp Arg Val L 115 120 125	ys Lys
gtg gtt ttg gtg ctg ctt ctt gtg act tcg gtc ttc ttg ttt t Val Val Leu Val Leu Leu Val Thr Ser Val Phe Leu Phe L 130 135 140	eu Asn
att gca ctg ata aac atc cat ata aat gcc agt atc aat gga ta Ile Ala Leu Ile Asn Ile His Ile Asn Ala Ser Ile Asn Gly Ty 150 155	yr Arg
aga aac aag act tgc agt tct gat tca agt aac ttt aca cga tt Arg Asn Lys Thr Cys Ser Ser Asp Ser Ser Asn Phe Thr Arg Ph 165 170	ne Ser 75
agt ctt att gta tta acc agc act gtg ttc att ttc ata ccc tt Ser Leu Ile Val Leu Thr Ser Thr Val Phe Ile Phe Ile Pro Ph 180 185	ne Thr
ttg tcc ctg gca gtg ttt ctt ctc ctc atc ttc tcc atg tgg aa Leu Ser Leu Ala Val Phe Leu Leu Leu Ile Phe Ser Met Trp Ly 200 205	s His
cgc aag aag atg cag cac act gtc aaa ata tcc gga gac gcc ag Arg Lys Lys Met Gln His Thr Val Lys Ile Ser Gly Asp Ala Se 210 215 220	r Thr
aaa gcc cac aga gga gtt aaa agt gtg atc act ttc ttc cta cto Lys Ala His Arg Gly Val Lys Ser Val Ile Thr Phe Phe Leu Leu 225 230 235	u Tyr
gcc att ttc tct ctg tct ttt ttc ata tca gtt tgg acc tct gaz Ala Ile Phe Ser Leu Ser Phe Phe Ile Ser Val Trp Thr Ser Glu 245 250	ı Arg
ttg gag gaa aat cta att att ctt tcc cag gtg atg gga atg gct Leu Glu Glu Asn Leu Ile Ile Leu Ser Gln Val Met Gly Met Ala 260 265 270	Tyr
cct tca tgt cac tca tgt gtt ctg att ctt gga aac aag aag ctg Pro Ser Cys His Ser Cys Val Leu Ile Leu Gly Asn Lys Lys Leu 275 280 285	Arg
cag gcc tct ctg tca gtg cta ctg tgg ctg agg tac atg ttc aaa Gln Ala Ser Leu Ser Val Leu Leu Trp Leu Arg Tyr Met Phe Lys 290 295 300	gat 912 Asp
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Phe Ile Ile Gly Asn Leu Gly Asn Ser Phe Ile Ala Leu Val Asn Cys 20 25 30

Ile Asp Trp Val Lys Gly Arg Lys Ile Ser Ser Val Asp Arg Ile Leu 35 40 45

Thr Ala Leu Ala Ile Ser Arg Ile Ser Leu Val Trp Leu Ile Phe Gly 50 55 60

Ser Trp Cys Val Ser Val Phe Phe Pro Ala Leu Phe Ala Thr Glu Lys 70 75 80

Met Phe Arg Met Leu Thr Asn Ile Trp Thr Val Ile Asn His Phe Ser 85 90 95

Val Trp Leu Ala Thr Gly Leu Gly Thr Phe Tyr Phe Leu Lys Ile Ala 100 105 110

Asn Phe Ser Asn Ser Ile Phe Leu Tyr Leu Lys Trp Arg Val Lys Lys 115 120 125

Val Val Leu Val Leu Leu Val Thr Ser Val Phe Leu Phe Leu Asn 130 135 140

Ile Ala Leu Ile Asn Ile His Ile Asn Ala Ser Ile Asn Gly Tyr Arg 145 150 155 160

Arg Asn Lys Thr Cys Ser Ser Asp Ser Ser Asn Phe Thr Arg Phe Ser 165 170 175

Ser Leu Ile Val Leu Thr Ser Thr Val Phe Ile Phe Ile Pro Phe Thr 180 185 190

Leu Ser Leu Ala Val Phe Leu Leu Leu Ile Phe Ser Met Trp Lys His 195 200 205

Arg Lys Lys Met Gln His Thr Val Lys Ile Ser Gly Asp Ala Ser Thr 210 215 220

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Lys Ala His Arg Gly Val Lys Ser Val Ile Thr Phe Phe Leu Leu Tyr 225 230 235 240	
Ala Ile Phe Ser Leu Ser Phe Phe Ile Ser Val Trp Thr Ser Glu Arg 245 250 255	
Leu Glu Glu Asn Leu Ile Ile Leu Ser Gln Val Met Gly Met Ala Tyr 260 265 270	
Pro Ser Cys His Ser Cys Val Leu Ile Leu Gly Asn Lys Lys Leu Arg 275 280 285	
Gln Ala Ser Leu Ser Val Leu Leu Trp Leu Arg Tyr Met Phe Lys Asp 290 295 300	
Gly Glu Pro Ser Gly His Lys Glu Phe Arg Glu Ser Ser 305 310 315	
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ttt ata att gga aat tta gga aat agt ttc ata gca ctg gtg aac tgt Phe Ile Ile Gly Asn Leu Gly Asn Ser Phe Ile Ala Leu Val Asn Cys 20 25 30	96
att gac tgg gtc aag gga aga aag atc tct tcg gtt gat cgg atc ctc Ile Asp Trp Val Lys Gly Arg Lys Ile Ser Ser Val Asp Arg Ile Leu 35 40 45	144
act gct ttg gca atc tct cga att agc ctg gtt tgg tta ata ttc gga Thr Ala Leu Ala Ile Ser Arg Ile Ser Leu Val Trp Leu Ile Phe Gly	192

PCT/US2004/019489 239/447 50

										23	9/44 /								
	50						55					60							
65						70			0 21,	O AI	а <u>Б</u> е	u Ph	e Al	a Th	ır G	lu	aaa Lys 80	24	0
					85			_	c tg e Tr	90	ı va	T TT	e As	n Hi	s P 9	he 5	Ser	288	8
gt. Va	c tg l Tr	g t	ta Seu	gct Ala 100	aca Thr	ggo Gl	c cto y Lei	c ggi ı Gly	t act y Thi 105	- Pn	t ta e Ty	t tt r Phe	t ct e Le	c aa u Ly 11	s I	ta le	gcc Ala	336	б
aat Asi	t tt n Ph	t t e S	ct Ser .15	aac Asn	tct Ser	att : Ile	ttt Phe	cto Lev 120	c tac ı Tyr)	ct: Le	a aad u Ly:	g tgg s Tr <u>r</u>	g ag Ar 12	g Va	t a l L	aa ys	aag Lys	384	4
gto Val	g gt l Va 13	t t l L O	tg	gtg Val	ctg Leu	ctt Leu	ctt Lev 135	· vas	g act Thr	tco Sei	g gto r Val	c tto l Phe 140	€ Le	g tt u Ph	t ti e Le	ta eu	aat Asn	432	2
att Ile 145	gca Ala	a c	tg eu	ata Ile	aac Asn	ato Ile 150	cat His	ata Ile	aat Asn	gco	agt Ser 155	: TTE	aat Ası	t gg n Gl	a ta y Ty	ac /r	aga Arg 160	480)
aga Arg	a aad J Asr	c a n L	ag ys	act Thr	tgc Cys 165		tct Ser	gat Asp	tca Ser	agt Ser 170	Asn	ttt Phe	aca Thi	a cga c Arq	a tt g Ph 17	ıe		528	;
agt Ser	ctt Leu	a 1 I	tt le	gta Val 180	tta Leu	acc Thr	agc Ser	act Thr	gtg Val 185	ttc Phe	att Ile	ttc Phe	ata Ile	cco Pro	tt Ph		act Thr	576	'
ttg Leu	tcc Ser	: Ci	tg eu 95	gca Ala	atg Met	ttt Phe	ctt Leu	ctc Leu 200	ctc Leu	atc Ile	ttc Phe	tcc Ser	atg Met	tgg Trp		a	cat His	624	
cgc Arg	aag Lys 210	aa Ly	ag /s l	atg Met	cag Gln	cac His	act Thr 215	gtc Val	aaa Lys	ata Ile	tcc Ser	gga Gly 220			ag Se	c :	acc Thr	672	
aaa Lys 225	gcc Ala	ca Hi	ac a .s i	aga Arg	gga Gly	gtt Val 230	aaa Lys	agt Ser	gtg Val	atc Ile	act Thr 235	ttc Phe	ttc Phe	cta Leu	ct Le	u :	tat Tyr 240	720	
gcc Ala	att Ile	tt Ph	c t ie S	tct Ser	ctg Leu 245	tct Ser	ttt Phe	ttc Phe	ata Ile	tca Ser 250	gtt Val	tgg Trp	acc Thr	tct Ser	ga: G1: 25!	a a		768	
ttg Leu	gag Glu	ga Gl	a a u <i>P</i>	aat Asn 260	cta Leu	att Ile	att Ile	ctt Leu	tcc Ser 265	cag Gln	gtg Val	atg Met	gga Gly	atg Met 270			at Tyr	816	
cct Pro	tca Ser	tg Cy 27	t c s H 5	ac lis	tca Ser	tgt Cys	gtt Val	ctg Leu 280	att Ile	ctt Leu	gga Gly	aac Asn	aag Lys 285	-	cto Lei	ga ıA	ıga Arg	864	
cag Gln	gcc Ala 290	tc Se:	t c r L	tg 1	tca (Ser		cta Leu 295	ctg Leu	tgg Trp	ctg Leu	agg Arg	tac Tyr 300		ttc Phe	aaa Lys	ıg A	at sp	912	

954

	W	D 2 005	5/0078	891											DCTr/
									240/	447					PCT/
305 G1 ⁷ āā		g cco	tca Sei	a ggt : Gly	cac His 310	, пув	a gaa s Glu	ttt Phe	aga Arg	gaa Glu 315	ı Ser	tct Ser	tga	ı	
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Phe	: Ile	: Ile	Gly 20	' Asn	Leu	Gly	Asn	Ser 25	Phe	Ile	Ala	Leu	Val 30	Asn	Суз
Ile	Asp	Trp 35	Val	Lys	Gly	Arg	Lys 40	Ile	Ser	Ser	Val	Asp 45	Arg	Ile	Leu
Thr	Ala 50	Leu	Ala	Ile	Ser	Arg 55	Ile	Ser	Leu	Val	Trp 60	Leu	Ile	Phe	Gly
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Met	Phe	Arg	Met	Leu 85	Ala	Asn	Ile	Trp	Thr 90	Val	Ile	Asn	His	Phe 95	Ser
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195 200 205

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Lys Ala His Arg Gly Val Lys Ser Val Ile Thr Phe Phe Leu Leu Tyr 225 230 235 240

Ala Ile Phe Ser Leu Ser Phe Phe Ile Ser Val Trp Thr Ser Glu Arg 245 250 255

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Gln Phe Gln Ala His Thr Val Ala Leu Val Ile Pro Phe Ile Leu Phe 185

Leu Ala Ser Thr Ile Phe Leu Met Ala Ser Leu Thr Lys Gln Ile Gln 200

His His Ser Thr Gly His Cys Asn Pro Ser Met Lys Ala His Phe Thr 215

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- Leu Thr Ile Thr Trp Glu Phe Phe Asn Ile Leu Thr Phe Trp Leu Asn 85 90 95
- Ser Leu Leu Thr Val Phe Tyr Cys Ile Lys Val Ser Ser Phe Thr His 100 105 110
- His Ile Phe Leu Trp Leu Arg Trp Arg Ile Leu Arg Leu Phe Pro Trp
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- Ile Leu Leu Gly Ser Leu Met Ile Thr Cys Val Thr Ile Ile Pro Ser 130 135 140
- Ala Ile Gly Asn Tyr Ile Gln Ile Gln Leu Leu Thr Met Glu His Leu 145 150 155 160
- Ser Arg Asn Ser Thr Val Thr Asp Lys Leu Glu Asn Phe His Gln Tyr 165 170 175
- Gln Phe Gln Ala His Thr Val Ala Leu Val Ile Pro Phe Ile Leu Phe 180 185 190
- Leu Ala Ser Thr Ile Phe Leu Met Ala Ser Leu Thr Lys Gln Ile Gln 195 200 205
- His His Ser Thr Gly His Cys Asn Pro Ser Met Lys Ala His Phe Thr 210 215 220
- Ala Leu Arg Ser Leu Ala Val Leu Phe Ile Val Phe Thr Ser Tyr Phe 225 230 235 240
- Leu Thr Ile Leu Ile Thr Ile Ile Gly Thr Leu Phe Asp Lys Arg Cys 245 250 255
- Trp Leu Trp Val Trp Glu Ala Phe Val Tyr Ala Phe Ile Leu Met His 260 270
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Gly Lys Cys

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atg at Met Il 1 gag tc	a ccc e Pro c ttg r Leu	aca Thr 20 tgg	att Ile	att Ile	gtg Val gtc Val	Cag Gln	agc Ser 25	Phe 10 agc Ser	Met cta Leu	Ile att Ile	gtt Val	gca Ala 30	Val 15 gtg Val	Leu ctg Leu	
atg at Met II. gag tc. Glu Se. ggc agg	a ccc Pro c ttg r Leu a gaa g Glu 35 c agc	aca Thr 20 tgg Trp	att Ile ctg Leu	att Ile caa Gln	gtg Val gtc Val	cag Gln aga Arg 40	Phe agc Ser 25 agg Arg	Phe 10 agc Ser ctg Leu	Met cta Leu atg Met	att Ile	gtt Val gtg Val 45	gca Ala 30 gac Asp	Val 15 gtg Val atg Met	ctg Leu att Ile	96
atg at Met II. I gag to Glu Seg Gly Ard	a ccc e Pro c ttg r Leu a gaa g Glu 35 c agc e Ser	aca Thr 20 tgg Trp ctg Leu	att Ile ctg Leu ggc Gly	att Ile caa Gln atc Ile tcc	gtg Val gtc Val tct Ser 55	cag Gln aga Arg 40 cgc Arg	Phe agc Ser 25 agg Arg ttc Phe	Phe 10 agc Ser ctg Leu tgt Cys	Met cta Leu atg Met cta Leu	att Ile cct Pro cag Gln 60	gtt Val gtg Val 45 tgg Trp	gca Ala 30 gac Asp gca Ala	Val 15 gtg Val atg Met tca Ser	ctg Leu att Ile atg Met	96
atg at Met II. I gag to Glu Second agg agg agg Gly Ard ctc atc Leu II. 50 ctg aac Leu Ass	a ccc e Pro c ttg r Leu a gaa g Glu 35 c agc e Ser c aat	aca Thr 20 tgg Trp ctg Leu ttt Phe	att Ile ctg Leu ggc Gly tgc Cys	att Ile caa Gln atc Ile tcc Ser 70 gaa	gtg Val gtc Val tct Ser 55 tat Tyr	cag Gln aga Arg 40 cgc Arg	Phe agc Ser 25 agg Arg ttc Phe aat Asn	Phe 10 agc Ser ctg Leu tgt Cys ttg Leu atc	Met cta Leu atg Met cta Leu aat Asn 75	att Ile cct Pro cag Gln 60 tat Tyr	gtt Val gtg Val 45 tgg Trp gta Val	gca Ala 30 gac Asp gca Ala ctt Leu	Val 15 gtg Val atg Met tca Ser tgc Cys	ctg Leu att Ile atg Met aac Asn 80	96 144 192

		11.	5				120)	,	- nec	1 AL	у њет 12:	ı Pne	∍ Pr	c tgg o Trp	
	130)				135			-	, vai	140) - TTE	3 TT€	Pr	t tca o Ser	432
1.4.	5				150					155	. 1111	. мет	GIU	l His	cta Leu 160	480
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			180					185	V 44.1.	116	FLO	Pne	11e	Leu	ttc Phe	576
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gga Gly	aag t Lys (290	tgc Cys	tag										•			876
<210 <211 <212 <213	> 29 > PF	91 RT	sapie	ens												
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									-00,						
Glu	Ser	Leu	Thr 20	Ile	Ile	Val	Gln	Ser 25	Ser	Leu	Ile	Val	Ala 30	Val	Leu

- Gly Arg Glu Trp Leu Gln Val Arg Arg Leu Met Pro Val Asp Met Ile
- Leu Ile Ser Leu Gly Ile Ser Arg Phe Cys Leu Gln Trp Ala Ser Met
- Leu Asn Asn Phe Cys Ser Tyr Phe Asn Leu Asn Tyr Val Leu Cys Asn 75
- Leu Thr Ile Thr Trp Glu Phe Phe Asn Ile Leu Thr Phe Trp Leu Asn 90
- Ser Leu Leu Thr Met Phe Tyr Cys Ile Lys Val Ser Ser Phe Thr His 105
- His Ile Phe Leu Trp Leu Arg Trp Arg Ile Leu Arg Leu Phe Pro Trp
- Ile Leu Leu Gly Ser Leu Met Ile Thr Cys Val Thr Ile Ile Pro Ser
- Ala Ile Gly Asn Tyr Ile Gln Ile Gln Leu Leu Thr Met Glu His Leu
- Pro Arg Asn Ser Thr Val Thr Asp Lys Leu Glu Asn Phe His Gln Tyr 165
- Gln Phe Gln Ala His Thr Val Ala Leu Val Ile Pro Phe Ile Leu Phe 185
- Leu Ala Ser Thr Ile Phe Leu Met Ala Ser Leu Thr Lys Gln Ile Gln 200
- His His Ser Thr Gly His Cys Asn Pro Ser Met Lys Ala His Phe Thr 215
- Ala Leu Arg Ser Leu Ala Val Leu Phe Ile Val Phe Thr Ser Tyr Phe 230
- Leu Thr Ile Leu Ile Thr Ile Ile Gly Thr Leu Phe Asp Lys Arg Cys 250
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aat gcc ttc gtt ttc ttg gtg aat ttt tgg gat gta gtg aag agg cag

Asn Ala Phe Val Phe Leu Val Asn Phe Trp Asp Val Val Lys Arg Gln

cca ctg agc aac agt gat tgt gtg ctg ctg tgt ctc agc atc agc cgg Pro Leu Ser Asn Ser Asp Cys Val Leu Leu Cys Leu Ser Ile Ser Arg

30

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192

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			100		712.0	ASII	GIII	105	Asn	Leu	Trp	Leu	Ala 110	Ala	tgc Cys	336
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ctg Leu	atc Ile 130	-2-	ttg Leu	gca Ala	agc Ser	tgg Trp 135	gtc Val	tcc Ser	agg Arg	aag Lys	atc Ile 140	tcc Ser	cag Gln	atg Met	ctc Leu	432
ctg Leu 145		att Ile	att Ile	ctt Leu	tgc Cys 150	tcc Ser	tgc Cys	atc Ile	tgc Cys	act Thr 155	gtc Val	ctc Leu	tgt Cys	gtt Val	tgg Trp 160	480
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agg Arg 225	aca Thr	atg Met	aag Lys	gtc Val	tat Tyr 230	acc Thr	aga Arg	aac Asn	tct Ser	cgt Arg 235	gac Asp	ccc Pro	agc Ser	ctg Leu	gag Glu 240	720
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tgg Trp	cgc Arg	gac Asp 275	aaa Lys	ata Ile	ej aaa	gtg Val	atg Met 280	gtt Val	tgt Cys	gtt Val	GJ Å aaa	ata Ile 285	atg Met	gca Ala	gct Ala	864
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Leu :	Ser	Leu 115	Leu	Tyr	Cys	Ser	Lys 120	Leu	Ile	Arg	Phe	Ser 125	His	Thr	Phe		
Leu :	Ile 130	Cys	Leu .	Ala	Ser	Trp 135	Val	Ser	Arg	Lys	Ile 140	Ser	Gln	Met	Leu		
Leu (145	Gly	Ile	Ile	Leu	Cys 150	Ser	Cys	Ile	Cys	Thr 155	Val	Leu	Cys	Val	Trp 160		

Cys Phe Phe Ser Arg Pro His Phe Thr Val Thr Thr Val Leu Phe Met 165 170 175

Asn	Asn	Asn	Thr 180	Arg	Leu	Asn	Trp	Gln 185	Ile	Lys	Asp	Leu	Asn 190	Leu	Phe
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Tyr Ser Phe Leu Phe Cys Tyr Leu Trp Ser Val Pro Pro Phe Leu Leu 195 200 205

Phe Leu Val Ser Ser Gly Met Leu Thr Val Ser Leu Gly Arg His Met 210 215 220

Arg Thr Met Lys Val Tyr Thr Arg Asn Ser Arg Asp Pro Ser Leu Glu 225 235 240

Ala His Ile Lys Ala Leu Lys Ser Leu Val Ser Phe Phe Cys Phe Phe 245

Val Ile Ser Ser Cys Ala Ala Phe Ile Ser Val Pro Leu Leu Ile Leu 260 265 270

Trp Arg Asp Lys Ile Gly Val Met Val Cys Val Gly Ile Met Ala Ala 275 280 285

Cys Pro Ser Gly His Ala Ala Val Leu Ile Ser Gly Asn Ala Lys Leu 290 295 300

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aca Thr	ttt: Phe	ctg Lev	tto Phe 20	att Ile	tca Ser	gtc Val	ctg Leu	gag Glu 25	ttt Phe	gca Ala	gtg Val	. Gly	ttt Phe 30	cto Leu	acc Thr	96
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atg Met	cta Leu	tgg Trp	atg Met 100	att Ile	gca Ala	aac Asn	caa Gln	gcc Ala 105	aac Asn	ctc Leu	tgg Trp	ctt Leu	gct Ala 110	gcc Ala	tgc Cys	336
ctc Leu	agc Ser	ctg Leu 115	ctt Leu	tac Tyr	tgc Cys	tcc Ser	aag Lys 120	ctc Leu	atc Ile	cgt Arg	ttc Phe	tct Ser 125	cac His	acc Thr	ttc Phe	384
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agg aca atg Arg Thr Met 225	aag gtc tat Lys Val Tyr 230	acc aga aac Thr Arg Asn	tct cgt gac ccc Ser Arg Asp Pro 235	agc ctg gag Ser Leu Glu 240 .	720
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Pro Leu Ser Asn Ser Asp Cys Val Leu Leu Cys Leu Ser Ile Ser Arg 50 55 60

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Met	Leu	Trp	Met 100	Ile	Ala	Asn	Gln	Ala 105	Asn	Leu	Trp	Leu	Ala 110	Ala	Cys
Leu	Ser	Leu 115	Leu	Tyr	Cys	Ser	Lys 120	Leu	Ile	Arg	Phe	Ser 125	His	Thr	Phe
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Arg 225	Thr	Met	Lys	Val	Tyr 230	Thr	Arg	Asn	Ser	Arg 235	Asp	Pro	Ser	Leu	Glu 240
Ala	His	Ile	Lys	Ala 245	Leu	Lys	Ser	Leu	Val 250	Ser	Phe	Phe	Cys	Phe 255	Phe
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variation

variation

variation

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variation

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ctg Leu 145	ggt Gly	att Ile	att Ile	ctt Leu	tgc Cys 150	tcc Ser	tgc Cys	atc Ile	tgc Cys	act Thr 155	gtc Val	ctc Leu	tgt Cys	gtt Val	tgg Trp 160	480
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Phe Gln Lys Leu Ser Glu Pro Leu Asn His Ser Tyr Gln Ala Ile Ile 85 90 95

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		290		-			gcc Ala 295	116	тец	тте	Ser	300	Asn	Ala	Lys	Leu	912
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Ph€	e Glr	ı Lys	. Lev	ser 85	Glu	Pro	Leu	Asn	His 90	Ser	туг	Glr	n Ala	11∈ 95	e Ile
Met	: Leu	ı Trp	Met 100	: Ile	Ala	Asn	Gln	Ala 105	Asn	Leu	ı Trp	Leu	Ala 110	Ala	. Cys
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Tyr	Ser	Phe 195	Leu	Phe	Cys	Tyr	Leu 200	Trp	Ser	Val	Pro	Pro 205	Phe	Leu	Leu
Phe	Leu 210	Val	Ser	Ser	Gly	Met 215	Leu	Thr	Val	Ser	Leu 220	Gly	Arg	His	Met
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Cys Phe Phe Ser Arg Pro His Phe Thr Val Thr Thr Val Leu Phe Met 165 170 175

Asn Asn Asn Thr Arg Leu Asn Trp Gln Ile Lys Asp Leu Asn Leu Phe 180 185 190

Tyr Ser Phe Leu Phe Cys Tyr Leu Trp Ser Val Pro Pro Phe Leu Leu 195 200 205

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Ala Leu Ser Acr	. Com 3 C			

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Phe Gln Lys Leu Ser Glu Pro Leu Asn His Ser Tyr Gln Ala Ile Ile

90 95

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Cys Phe Phe Ser Arg Pro His Phe Thr Val Thr Thr Val Leu Phe Met 165 170 175

Asn Asn Asn Thr Arg Leu Asn Trp Gln Ile Lys Asp Leu Asn Leu Phe 180 180 185 190

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Arg Thr Met Lys Val Tyr Thr Arg Asn Ser Arg Asp Pro Ser Leu Glu 225 230 230 235

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Val Ile Ser Ser Cys Ala Ala Phe Ile Ser Val Pro Leu Leu Ile Leu 260 265 270

Trp Cys Asp Lys Ile Gly Val Met Val Cys Val Gly Ile Met Ala Ala 275 280 285

Cys Pro Ser Gly His Ala Ala Ile Leu Ile Ser Gly Asn Ala Lys Leu 290 295 300

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<220> <221> <222> <223>		iatio		•					,						
<220> <221> <222> <223>		latio 5)(•
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aca ttt Thr Phe	ctg Leu	ttc Phe 20	att Ile	tca Ser	gtc Val	ctg Leu	gag Glu 25	ttt Phe	gca Ala	gtg Val	GJ À āāā	ttt Phe 30	ctg Leu	acc Thr	96
aat gcc Asn Ala	ttc Phe 35	gtt Val	ttc Phe	ttg Leu	gtg Val	aat Asn 40	ttt Phe	tgg Trp	gat Asp	gta Val	gtg Val 45	aag Lys	agg Arg	cag Gln	144
gca ctg Ala Leu 50	agc Ser	aac Asn	agt Ser	gat Asp	tgt Cys 55	gtg Val	ctg Leu	ctg Leu	tgt Cys	ctc Leu 60	agc Ser	atc Ile	agc Ser	cgg Arg	192
ctt ttc Leu Phe 65	ctg Leu	cat His	gga Gly	ctg Leu 70	ctg Leu	ttc Phe	ctg Leu	agt Ser	gct Ala 75	atc Ile	cag Gln	ctt Leu	acc Thr	cac His 80	240
ttc cag Phe Gln	aag Lys	ttg Leu	agt Ser 85	gaa Glu	cca Pro	ctg Leu	aac Asn	cac His 90	agc Ser	tac Tyr	caa Gln	gcc Ala	atc Ile 95		288

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atg Met	cta Leu	tgg Trp	atg Met 100	att Ile	gca Ala	aac Asn	caa Gln	gcc Ala 105	aac Asn	ctc Leu	tgg Trp	ctt Leu	gct Ala 110	gcc Ala	tgc Cys		336
ctc Leu	agc Ser	ctg Leu 115	ctt Leu	tac Tyr	tgc Cys	tcc Ser	aag Lys 120	ctc Leu	atc Ile	cgt Arg	ttc Phe	tct Ser 125	cac His	acc Thr	ttc Phe		384
ctg Leu	atc Ile 130	tgc Cys	ttg Leu	gca Ala	agc Ser	tgg Trp 135	gtc Val	tcc Ser	agg Arg	aag Lys	atc Ile 140	tcc Ser	cag Gln	atg Met	ctc Leu		432
145	Cly	116	116	nea	150	tcc Ser	Cys	тте	Cys	Thr 155	Val	Leu	Суѕ	Val	Trp 160		480
0,70		1110	per	165	FIO	cac His	rne	Tnr	170	Thr	Thr	Val	Leu	Phe 175	Met		528
	11011	H211	180	Arg	ьеи	aac Asn	Trp	Gin 185	Ile	Lys	Asp	Leu	Asn 190	Leu	Phe		576
-1-	501	195	neu	rne	Cys	tat Tyr	200	Trp	Ser	Val	Pro	Pro 205	Phe	Leu	Leu	,	624
	210	Val	Der	Ser	стЛ	atg Met 215	тей	Thr	Val	Ser	Leu 220	Gly	Arg	His	Met		672
agg Arg 225	aca Thr	atg Met	aag Lys	gtc Val	tat Tyr 230	acc Thr	aga Arg	aac Asn	tct Ser	cgt Arg 235	gac Asp	ccc Pro	agc Ser	ctg Leu	gag Glu 240		720
gcc Ala	cac His	att Ile	aaa Lys	gcc Ala 245	ctc Leu	aag Lys	tct Ser	ctt Leu	gtc Val 250	tcc Ser	ttt Phe	ttc Phe	tgc Cys	ttc Phe 255	ttt Phe		768
gtg Val	ata Ile	tca Ser	tcc Ser 260	tgt Cys	gtt Val	gcc Ala	ttc Phe	atc Ile 265	tct Ser	gtg Val	ccc Pro	cta Leu	ctg Leu 270	att Ile	ctg Leu		816
tgg Trp	cgc Arg	gac Asp 275	aaa Lys	ata Ile	GJ À Gaa	gtg Val	atg Met 280	gtt Val	tgt Cys	gtt Val	GJÅ aaa	ata Ile 285	atg Met	gca Ala	gct Ala		864
tgt Cys	ccc Pro 290	tct Ser	ej gaa	cat His	gca Ala	gcc Ala 295	atc Ile	ctg Leu	atc Ile	tca Ser	300 Gly ggc	aat Asn	gcc Ala	aag Lys	ttg Leu		912
agg Arg 305	aga Arg	gct Ala	gtg Val	atg Met	acc Thr 310	att Ile	ctg Leu	ctc Leu	tgg Trp	gct Ala 315	cag Gln	agc Ser	agc Ser	ctg Leu	aag Lys 320		960
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Thr Phe Leu Phe Ile Ser Val Leu Glu Phe Ala Val Gly Phe Leu Thr 20 25 30

Asn Ala Phe Val Phe Leu Val Asn Phe Trp Asp Val Val Lys Arg Gln 35 40 45

Ala Leu Ser Asn Ser Asp Cys Val Leu Leu Cys Leu Ser Ile Ser Arg 50 55 60

Leu Phe Leu His Gly Leu Leu Phe Leu Ser Ala Ile Gln Leu Thr His 65 70 75 80

Phe Gln Lys Leu Ser Glu Pro Leu Asn His Ser Tyr Gln Ala Ile Ile 85 90 95

Met Leu Trp Met Ile Ala Asn Gln Ala Asn Leu Trp Leu Ala Ala Cys 100 105 110

Leu Ser Leu Leu Tyr Cys Ser Lys Leu Ile Arg Phe Ser His Thr Phe 115 120 125

Leu Ile Cys Leu Ala Ser Trp Val Ser Arg Lys Ile Ser Gln Met Leu 130 135 140

Leu Gly Ile Ile Leu Cys Ser Cys Ile Cys Thr Val Leu Cys Val Trp
145 150 155 160

Cys Phe Phe Ser Arg Pro His Phe Thr Val Thr Thr Val Leu Phe Met 165 170 175

Asn Asn Asn Thr Arg Leu Asn Trp Gln Ile Lys Asp Leu Asn Leu Phe 180 185 190

Tyr Ser Phe Leu Phe Cys Tyr Leu Trp Ser Val Pro Pro Phe Leu Leu 195 200 205

Phe Leu Val Ser Ser Gly Met Leu Thr Val Ser Leu Gly Arg His Met

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Arg Thr Met Lys Val Tyr Thr Arg Asn Ser Arg Asp Pro Ser Leu Glu 225 235 240

Ala His Ile Lys Ala Leu Lys Ser Leu Val Ser Phe Phe Cys Phe Phe 245 250 255

Val Ile Ser Ser Cys Val Ala Phe Ile Ser Val Pro Leu Leu Ile Leu 260 265 270

Trp Arg Asp Lys Ile Gly Val Met Val Cys Val Gly Ile Met Ala Ala 275 280 285

Cys Pro Ser Gly His Ala Ala Ile Leu Ile Ser Gly Asn Ala Lys Leu 290 295 300

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Met Leu Gly Arg Cys Phe Pro Pro Asp Thr Lys Glu Lys Gln Gln Leu

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aga atg act aaa ctc tgc gat cct gca gaa agt gaa ttg tcg cca ttt
Arg Met Thr Lys Leu Cys Asp Pro Ala Glu Ser Glu Leu Ser Pro Phe
20 25 30

ctc atc acc tta att tta gca gtt tta ctt gct gaa tac ctc att ggt 144

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	Le	u I	le :	Thr 35	Let	ı Il	e Le	u Al	la Va 40	al Le O	eu L	eu A	la	Glų	1 Ty:	r Le	eu I	le	Gly	
		50)					55		g go et Al	.u I.	re n	12	60 60	LAT	a GI	.u T	rp	Val	192
	65						70			ıt gg r Gl	A LTI	7	5	ren	. va.	L Ph	e Le	eu	Ser 80	240
						85			50	c ct r Le	90) :C M(≇દ .	тел	Glu	ıIl	e Th 95	ır :	Ile	288
					100				1	t tc r Se 10	5	u As	sp 1	Ата	val	. Ty:	r T <u>y</u> O	r l	Ala	336
			1	15					12			e c7	/S S	ser	ьеи 125	Tr	o Ph	e A	Ala	384
		130)					135	5	t gto	г пу	S 11	.e <i>A</i>	41a 140	Asn	Ph€	e Se	r I	'yr	432
	145						150	•	,	g aga O Arg	,	15	5	тЛ	ьeu	ΙΤ€	? Pr	0 T 1	rp 60	480
						165		-		tcc Ser	170))	t H	ııs	Ser	Met	Ph:	e C 5	уs	528
]	180			-2-	0,0	aac Asn 185	. ASI	ı se:	r P.	ne	Pro	Ile 190	His	s S	er	576
			19	5					200		501	010		те <i>1</i>	205	vaı	Va]	L G.	Ly	624
I	tg eu	gct Ala 210	tt Ph	t t e P	tc he	ttt Phe	aac Asn	ctg Leu 215	GJ A aaa	att Ile	gtg Val	act Thr	. P1	ct o ro 1 20	ctg Leu	atc Ile	ato Met	ı tt	ic ne	672
a I 2	tc le 25	ctg Leu	ac Th	a g r A	cc a la :	acc Thr	ctg Leu 230	ctg Leu	atc Ile	ctc Leu	tct Ser	cto Leu 235	ı rı	ag a Ys <i>P</i>	aga Arg	cac His	acc Thr	ct Le	u	720
H	ac i	atg Met	Gl:	a a y S	gc a er 1	aat Asn 245	gcc Ala	aca Thr	GJÀ âàā	tcc Ser	aac Asn 250	gac Asp	cc Pr	cc a	agc . Ser 1	atg Met	gag Glu 255			768
C:	ac a	atg Met	G17 aad	g g y A: 20	cc a la 1 60	itc le	aaa Lys	gct Ala	atc Ile	agc Ser 265	tac Tyr	ttt Phe	ct Le	c a u I	le]	ctc Leu 270		at Il	t e	816
t t Pi	ic a	aat Asn	gca Ala	agt aVa	t g	rct (la)	ctg Leu	ttt Phe	atc Ile	tac Tyr	ctg Leu	tcc Ser	aa As:	са пМ			gac Asp	at Il	c e	864

_	283/4	4 7
275	280	285

		275					280					285				
	290					295	-3 -		-16	116	300	Ala	Ala	Tyr	cct Pro	912
305					310			0111	чэр	315	Pro	СΤΆ	Leu	Arg	Arg 320	960
gcc Ala	tgg Trp	aag Lys	cgg Arg	ctt Leu 325	cag Gln	ctt Leu	cga Arg	ctt Leu	cat His 330	ctt Leu	tac Tyr	cca Pro	aaa Lys	gag Glu 335	tgg Trp	1008
act Thr	ctg Leu	tga														1017

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<213> homo sapiens

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Leu Ile Thr Leu Ile Leu Ala Val Leu Leu Ala Glu Tyr Leu Ile Gly

Ile Ile Ala Asn Gly Phe Ile Met Ala Ile His Ala Ala Glu Trp Val

Gln Asn Lys Ala Val Ser Thr Ser Gly Arg Ile Leu Val Phe Leu Ser 75

Val Ser Arg Ile Ala Leu Gln Ser Leu Met Met Leu Glu Ile Thr Ile

Ser Ser Thr Ser Leu Ser Phe Tyr Ser Glu Asp Ala Val Tyr Tyr Ala

Phe Lys Ile Ser Phe Ile Phe Leu Asn Phe Cys Ser Leu Trp Phe Ala 120

Ala Trp Leu Ser Phe Phe Tyr Phe Val Lys Ile Ala Asn Phe Ser Tyr

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Pro 145	Leu	Phe	Leu	Lys	Leu 150	Arg	Trp	Arg	Ile	Thr 155	Gly	Leu	Ile	Pro	Trp 160
Leu	Leu	Trp	Leu	Ser 165	Val	Phe	Ile	Ser	Phe 170	Ser	His	Ser	Met	Phe 175	Cys
Ile	Asn	Ile	Cys 180	Thr	Val	Tyr	Cys	Asn 185	Asn	Ser	Phe	Pro	Ile 190	His	Ser
Ser	Asn	Ser 195	Thr	Lys	Lys	Thr	Tyr 200	Leu	Ser	Glu	Ile	Asn 205	Val	Val	Gly
Ļeu	Ala 210	Phe	Phe	Phe	Asn	Leu 215	Gly	Ile	Val	Thr	Pro 220	Leu	Ile	Met	Phe
Ile 225	Ļеu	Thr	Ala	Thr	Leu 230	Leu	Ile	Leu	Ser	Leu 235	Lys	Arg	His	Thr	Leu 240
His	Met	Gly	Ser	Asn 245	Ala	Thr	Gly	Ser	Asn 250	Asp	Pro	Ser	Met	Glu 255	Ala
His	Met	Gly	Ala 260	Ile	Lys	Ala	Ile	Ser 265	Tyr	Phe	Leu	Ile	Leu 270	Tyr	Ile
Phe	Asn	Ala 275	Val	Ala	Leu	Phe	Ile 280	Tyr	Leu	Ser	Asn	Met 285	Phe	Asp	Ile
Asn	Ser 290	Leu	Trp	Asn	Asn	Leu 295	Cys	Gln	Ile	Ile	Met 300	Ala	Ala	Tyr	Pro
Ala 305	Ser	His	Ser	Ile	Leu 310	Leu	Ile	Gln	Asp	Asn 315	Pro	Gly	Leu	Arg	Arg 320
Ala	Trp	Lys	Arg	Leu 325	Gln	Leu	Arg	Leu	His 330	Leu	Tyr	Pro	Lys	Glu 335	Trp
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Thr Leu

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i	aga Arg	atg Met	act Thr	aaa Lys 20	ctc Leu	tgc Cys	gat Asp	cct Pro	gca Ala 25	gaa Glu	agt Ser	gaa Glu	ttg Leu	tcg Ser 30	cca Pro	ttt Phe	96
	ctc Leu	atc Ile	acc Thr 35	tta Leu	att Ile	tta Leu	gca Ala	gtt Val 40	tta Leu	ctt Leu	gct Ala	gaa Glu	tac Tyr 45	ctc Leu	att Ile	ggt Gly	144
,	atc Ile	att Ile 50	gca Ala	aat Asn	ggt Gly	ttc Phe	atc Ile 55	atg Met	gct Ala	ata Ile	cat His	gca Ala 60	gct Ala	gaa Glu	tgg Trp	gtt Val	192
1	caa Gln 65	aat Asn	aag Lys	gca Ala	gtt Val	tcc Ser 70	aca Thr	agt Ser	ggc Gly	agg Arg	atc Ile 75	ctg Leu	gtt Val	ttc Phe	ctg Leu	agt Ser 80	240
•	gta Val	tcc Ser	aga Arg	ata Ile	gct Ala 85	ctc Leu	caa Gln	agc Ser	ctc Leu	atg Met 90	atg Met	tta Leu	gaa Glu	att Ile	acc Thr 95	atc Ile	288
,	agc Ser	tca Ser	acc Thr	tcc Ser 100	cta Leu	agt Ser	ttt Phe	tat Tyr	tct Ser 105	gaa Glu	gac Asp	gct Ala	gta Val	tat Tyr 110	tat Tyr	gca Ala	336
	ttc Phe	aaa Lys	ata Ile 115	agt Ser	ttt Phe	ata Ile	ttc Phe	tta Leu 120	aat Asn	ttt Phe	tgt Cys	agc Ser	ctg Leu 125	tgg Trp	ttt Phe	gct Ala	384
•	gcc Ala	tgg Trp 130	Leu	agt Ser	ttc Phe	ttc Phe	tac Tyr 135	ttt Phe	gtg Val	aag Lys	att Ile	gcc Ala 140	aat Asn	ttc Phe	tcc Ser	tac Tyr	432
	ccc Pro 145	ctt Leu	ttc Phe	ctc Leu	aaa Lys	ctg Leu 150	agg Arg	tgg Trp	aga Arg	att Ile	act Thr 155	gga Gly	ttg Leu	ata Ile	ccc Pro	tgg Trp 160	480
	ctt Leu	ctg Leu	tgg Trp	ctg Leu	tcc Ser 165	gtg Val	ttt Phe	att Ile	tcc Ser	ttc Phe 170	agt Ser	cac His	agc Ser	atg Met	ttc Phe 175	tgc Cys	528
	atc Ile	aac Asn	atc Ile	tgc Cys 180	act Thr	gtg Val	tat Tyr	tgt Cys	aac Asn 185	aat Asn	tct Ser	ttc Phe	cct Pro	atc Ile 190	cac His	tcc Ser	576

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		195			-1-	****	200	пец	ser	GIU	TTE	205	Val	Val	Gly	624
	210					215	OLY	116	vaı	Thr	220		Ile	Met	Phe	672
225	-				230			Dea	ser	ьец 235	гуз	aga Arg	His	Thr	Leu 240	720
		-		245		****	GLY	Ser	250	Asp	Pro	agc Ser	Met	Glu 255	Ala	768
		-	260		- 10	1114	*16	265	Tyr	Pne	Leu	att Ile	Leu 270	Tyr	Ile	816
ttc Phe	aat Asn	gca Ala 275	gtt Val	gct Ala	ctg Leu	ttt Phe	atc Ile 280	tac Tyr	ctg Leu	tcc Ser	aac Asn	atg Met 285	ttt Phe	gac Asp	atc Ile	864
aac Asn	agt Ser 290	ctg Leu	tgg Trp	aat Asn	aat Asn	ttg Leu 295	tgc Cys	cag Gln	atc Ile	atc Ile	atg Met 300	gct Ala	gcc Ala	tac Tyr	cct Pro	912
gcc Ala 305	agc Ser	cac His	tca Ser	att Ile	cta Leu 310	ctg Leu	att Ile	caa Gln	gat Asp	aac Asn 315	cct Pro	GJ À aaa	ctg Leu	aga Arg	aga Arg 320	960
gcc Ala	tgg Trp	aag Lys		ctt Leu 325	cag Gln	ctt Leu	cga Arg	neu	cat His 330	ctt Leu	tac Tyr	cca Pro	Lys	gag Glu 335	tgg Trp	1008
act Thr	ctg Leu	tga														1017

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<212> PRT

<213> homo sapiens

<400> 170

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Leu Ile Thr Leu Ile Leu Ala Val Leu Leu Ala Glu Tyr Leu Ile Gly 35 40 45

Ile Ile Ala Asn Gly Phe Ile Met Ala Ile His Ala Ala Glu Trp Val

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300

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	50					55					60				
Gln 65	Asn	Lys	Ala	Val	. Ser 70	Thr	Ser	Gly	' Arg	Ile 75	Leu	. Val	. Phe	e Leu	Ser 80
Val	Ser	Arg	Ile	Ala 85	. Leu	Gln	Ser	Leu	Met 90	Met	Leu	Glu	Ile	Thr 95	Ile
Ser	Ser	Thr	Ser 100	Leu	Ser	Phe	Tyr	Ser 105	Glu	Asp	Ala	Val	Туг 110		Ala
Phe	Lys	Ile 115	Ser	Phe	Ile	Phe	Leu 120	Asn	Phe	Cys	Ser	Leu 125	Trp	Phe	Ala
Ala	Trp 130	Leu	Ser	Phe	Phe	Tyr 135	Phe	Val	Lys	Ile	Ala 140	Asn	Phe	Ser	Tyr
Pro 145	Leu	Phe	Leu	Lys	Leu 150	Arg	Trp	Arg	Ile	Thr 155	Gly	Leu	Ile	Pro	Trp 160
Leu	Leu	Trp	Leu	Ser 165	Val	Phe	Ile	Ser	Phe 170	Ser	His	Ser	Met	Phe 175	Cys
Ile	Asn	Ile	Cys 180	Thr	Val	Tyr	Cys	Asn 185	Asn	Ser	Phe	Pro	Ile 190	His	Ser
Phe 1	Asn	Ser 195	Thr	Glu	Lys	Thr	Tyr 200	Leu	Ser	Glu	Ile	Asn 205	Val	Val	Gly
Leu 2	Ala 210	Phe	Phe	Phe	Asn	Leu 215	Gly	Ile	Val	Thr	Pro 220	Leu	Ile	Met	Phe
Ile 1 225	Leu	Thr	Ala	Thr	Leu 230	Leu	Ile	Leu	Ser	Leu 235	Lys	Arg	Hìs	Thr	Leu 240
His N	Met	Gly	Ser	Asn 245	Ala	Thr	Gly	Ser	Asn 250	Asp	Pro	Ser	Met	Glu 255	Ala
His M	1et	Gly	Ala 260	Ile	Lys	Ala	Ile	Ser 265	Tyr	Phe	Leu	Ile	Leu 270	Tyr	Ile
Phe A	lsn .	Ala 275	Val	Ala	Leu	Phe	Ile 280	Tyr	Leu	Ser	Asn	Met 285	Phe	Asp	Ile

Asn Ser Leu Trp Asn Asn Leu Cys Gln Ile Ile Met Ala Ala Tyr Pro

Ala Ser His Ser Ile Leu Leu Ile Gln Asp Asn Pro Gly Leu Arg Arg 305 310 315 320

Ala Trp Lys Arg Leu Gln Leu Arg Leu His Leu Tyr Pro Lys Glu Trp 325 330 335

Thr Leu

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	21> 22>		iatio		,											
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aag Lys	gtc Val	acc Thr	ttc Phe 20	act Thr	ttg Leu	gtg Val	gtc Val	tcc Ser 25	gga Gly	ata Ile	gag Glu	tgc Cys	atc Ile 30	act Thr	ggc	96
atc Ile	ctt Leu	ggg Gly 35	agt Ser	ggc Gly	ttc Phe	atc Ile	acg Thr 40	gcc Ala	atc Ile	tat Tyr	ggg	gct Ala 45	gag Glu	tgg Trp	gcc Ala	144
agg Arg	ggc Gly 50	aaa Lys	aca Thr			act Thr 55	~ <u>y</u>	gac Asp	cgc Arg	att Ile	atg Met 60	ttg Leu	atg Met	ctg Leu	agc Ser	192
ttt Phe 65	tcc Ser	agg Arg	ctc Leu	ttg Leu	cta Leu 70	cag Gln	att Ile	tgg Trp	atg Met	atg Met 75	ctg Leu	gag Glu	aac Asn	att Ile	ttc Phe 80	240
agt	ctg	cta	ttc	cga	att	gtt	tat	aac	caa	aac	tca	gtg	tat	atc		288

	** (<i>J</i> 200.	5/00/8	891					289	/447					PCT/US2	004/0194
Ser	Leu	Leu	Phe	Arg 85	Ile	Va1	Tyr	Asn			Ser	Val	Tyr	Ile 95	Leu	
ttc Phe	aaa Lys	gtc Val	atc Ile 100	act Thr	gtc Val	ttt Phe	ctg Leu	aac Asn 105	cat His	tcc Ser	aat Asn	ctc Leu	tgg Trp 110	ttt Phe	gct Ala	336
1114	тър	115	пĵз	vai	rne	tat Tyr	120	ьeu	Arg	Ile	Ala	Asn 125	Phe	Asn	His	384
	130	1116	LIIG	пец	wer	aag Lys 135	Arg	гда	ITe	Ile	Val 140	Leu	Met	Pro	Trp	432
145	пец	ALG	neu	ser	150	ttg Leu	vai	Ser	Leu	Ser 155	Phe	Ser	Phe	Pro	Leu 160	480
	**** 9	тър	val	165	ASII	gtg Val	Tyr	vaı	170	Ser	Ser	Ile	Pro	Ile 175	Pro	528
tcc Ser	tcc Ser	aac Asn	tcc Ser 180	acg Thr	gag Glu	aag Lys	aag Lys	tac Tyr 185	ttc Phe	tct Ser	gag Glu	acc Thr	aat Asn 190	atg Met	gtc Val	576
aac Asn	ctg Leu	gta Val 195	ttt Phe	ttc Phe	tat Tyr	aac Asn	atg Met 200	GJÀ ààà	atc Ile	ttc Phe	gtt Val	cct Pro 205	ctg Leu	atc Ile	atg Met	624
ttc Phe	atc Ile 210	ctg Leu	gca Ala	gcc Ala	acc Thr	ctg Leu 215	ctg Leu	atc Ile	ctc Leu	tct Ser	ctc Leu 220	aag Lys	aga Arg	cac His	acc Thr	672
cta Leu 225	cac His	atg Met	gga Gly	agc Ser	aat Asn 230	gcc Ala	aca Thr	GJÀ āāā	tcc Ser	agg Arg 235	gac Asp	ccc Pro	agc Ser	atg Met	aag Lys 240	720
gct Ala	cac His	ata Ile	GJÀ aaa	gcc Ala 245	atc Ile	aaa Lys	gcc Ala	acc Thr	agc Ser 250	tac Tyr	ttt Phe	ctc Leu	atc Ile	ctc Leu 255	tac Tyr	768
att Ile	ttc Phe	aat Asn	gca Ala 260	att Ile	gct Ala	cta Leu	ttt Phe	ctt Leu 265	tcc Ser	acg Thr	tcc Ser	aac Asn	atc Ile 270	ttt Phe	gac Asp	816
act Thr	tac Tyr	agt Ser 275	tcc Ser	tgg Trp	aat Asn	att Ile	ttg Leu 280	tgc Cys	aag Lys	atc Ile	atc Ile	atg Met 285	gct Ala	gcc Ala	tac Tyr	864
cct Pro	gcc Ala 290	Gly ggc	cac His	tca Ser	gta Val	caa Gln 295	ctg Leu	atc Ile	ttg Leu	ggc Gly	aac Asn 300	cct Pro	GJA aaa	ctg Leu	aga Arg	912
aga Arg 305	gcc Ala	tgg Trp	aag Lys	cgg Arg	ttt Phe 310	cag Gln	cac His	caa Gln	gtt Val	cct Pro 315	ctt Leu	tac Tyr	cta Leu	aaa Lys	320 Gly ggg	960
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Lys Val Thr Phe Thr Leu Val Val Ser Gly Ile Glu Cys Ile Thr Gly

Ile Leu Gly Ser Gly Phe Ile Thr Ala Ile Tyr Gly Ala Glu Trp Ala

Arg Gly Lys Thr Leu Pro Thr Gly Asp Arg Ile Met Leu Met Leu Ser 55

Phe Ser Arg Leu Leu Gln Ile Trp Met Met Leu Glu Asn Ile Phe 70

Ser Leu Leu Phe Arg Ile Val Tyr Asn Gln Asn Ser Val Tyr Ile Leu 85

Phe Lys Val Ile Thr Val Phe Leu Asn His Ser Asn Leu Trp Phe Ala 100

Ala Trp Leu Lys Val Phe Tyr Cys Leu Arg Ile Ala Asn Phe Asn His 115 120

Pro Leu Phe Phe Leu Met Lys Arg Lys Ile Ile Val Leu Met Pro Trp 130 135

Leu Leu Arg Leu Ser Val Leu Val Ser Leu Ser Phe Ser Phe Pro Leu 145 150

Ser Arg Asp Val Phe Asn Val Tyr Val Asn Ser Ser Ile Pro Ile Pro 165 175

Ser Ser Asn Ser Thr Glu Lys Lys Tyr Phe Ser Glu Thr Asn Met Val 180 185

Asn Leu Val Phe Phe Tyr Asn Met Gly Ile Phe Val Pro Leu Ile Met 195 200 205

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Phe Ile Leu Ala Ala Thr Leu Leu Ile Leu Ser Leu Lys Arg His Thr 210 215

Leu His Met Gly Ser Asn Ala Thr Gly Ser Arg Asp Pro Ser Met Lys 230 235

Ala His Ile Gly Ala Ile Lys Ala Thr Ser Tyr Phe Leu Ile Leu Tyr 245

Ile Phe Asn Ala Ile Ala Leu Phe Leu Ser Thr Ser Asn Ile Phe Asp 260

Thr Tyr Ser Ser Trp Asn Ile Leu Cys Lys Ile Ile Met Ala Ala Tyr 275

Pro Ala Gly His Ser Val Gln Leu Ile Leu Gly Asn Pro Gly Leu Arg 295 300

Arg Ala Trp Lys Arg Phe Gln His Gln Val Pro Leu Tyr Leu Lys Gly 310 315

Gln Thr Leu

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48

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			20					25	r GTZ	, ⊤T€	€ GI	ı Cys	30 30 €	∍ Thi	t ggc c Gly	96
atc Ile	ctt Leu	ggg Gly 35	agt Ser	Gly	tto Phe	ato Ile	acg Thr 40	gco Ala	ato a Ile	tate Tyr	: Gl ⁷	g gct y Ala 45	gaç Glu	g tgo ı Tr <u>p</u>	g gcc Ala	144
agg Arg	ggc Gly 50	aaa Lys	aca Thr	cto Leu	ccc Pro	act Thr 55	ggt	gac Asp	cgc Arg	att	ato Met	ttg Leu	ı atçı Met	g cto : Lev	g agc 1 Ser	192
ttt Phe 65	tcc Ser	agg Arg	ctc Leu	ttg Leu	cta Leu 70	cag Gln	att Ile	tgg Trp	ı atg Met	atg Met 75	cto Leu	gag Glu	aac Asn	att	ttc Phe 80	240
agt Ser	ctg Leu	cta Leu	ttc Phe	cga Arg 85	att Ile	gtt Val	tat Tyr	aac Asn	caa Gln 90	aac Asn	tca Ser	gtg Val	tat Tyr	ato Ile 95	ctc Leu	288
ttc Phe	aaa Lys	gtc Val	atc Ile 100		gtc Val	ttt Phe	ctg Leu	aac Asn 105	HIS	tcc Ser	aat Asn	ctc Leu	tgg Trp 110	Phe	gct Ala	. 336
gcc Ala	tgg Trp	ctc Leu 115	aaa Lys	gtc Val	ttc Phe	tat Tyr	tgt Cys 120	ctt Leu	aga Arg	att Ile	gca Ala	aac Asn 125	,ttc Phe	aat Asn	cat His	384
cct Pro	ttg Leu 130	ttc Phe	ttc Phe	ctg Leu	atg Met	aag Lys 135	agg Arg	aaa Lys	atc Ile	ata Ile	gtg Val 140	Leu	atg Met	cct Pro	tgg Trp	432
ctt Leu 145	ctc Leu	agg Arg	ctg Leu	tca Ser	gtg Val 150	ttg Leu	gtt Val	tcc Ser	tta Leu	agc Ser 155	ttc Phe	agc Ser	ttt Phe	cct Pro	ctc Leu 160	480
tcg Ser	aga Arg	gat Asp	gtc Val	ttc Phe 165	aat Asn	val	TAT	val	aat Asn 170	Ser	tcc Ser	att Ile	cct Pro	atc Ile 175	ccc Pro	528
tcc Ser	tcc Ser	aac Asn	tcc Ser 180	acg Thr	gag Glu	aag Lys	aag Lys	tac Tyr 185	ttc Phe	tct Ser	gag Glu	acc Thr	aat Asn 190		gtc Val	576
aac Asn	ctg Leu	gta Val 195	ttt Phe	ttc Phe	tat Tyr	aac Asn	atg Met 200	G1A aaa	atc Ile	ttc Phe	gtt Val	cct Pro 205	ctg Leu	atc Ile	atg Met	624
ttc Phe	atc Ile 210	ctg Leu	gca Ala	gcc Ala	acc Thr	ctg Leu 215	ctg Leu	atc Ile	ctc Leu	tct Ser	ctc Leu 220	aag Lys	aga Arg	cac His	acc Thr	672
cta (Leu) 225	cac His	atg Met	gga Gly		aat Asn 230	gcc Ala	aca Thr	ggg Gly	tcc Ser	agg Arg 235	gac Asp	ccc Pro	agc Ser	atg Met	aag Lys 240	720
gct (Ala 1	cac His	ata Ile	4	gcc Ala 245	atc Ile	aaa Lys .	gcc Ala	THE	agc Ser 250	tac Tyr	ttt Phe	ctc Leu	Ile	ctc Leu 255		768

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			260					265	DGT	TILL	ser	Asn	11e 270	Phe	gac Asp	816	1
		275					280	-20	2,0	116	тте	Met 285	Ala	Ala		864	•
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Gln Thr Leu 972

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Lys Val Thr Phe Thr Leu Val Val Ser Gly Ile Glu Cys Ile Thr Gly

Ile Leu Gly Ser Gly Phe Ile Thr Ala Ile Tyr Gly Ala Glu Trp Ala

Arg Gly Lys Thr Leu Pro Thr Gly Asp Arg Ile Met Leu Met Leu Ser

Phe Ser Arg Leu Leu Gln Ile Trp Met Met Leu Glu Asn Ile Phe

Ser Leu Leu Phe Arg Ile Val Tyr Asn Gln Asn Ser Val Tyr Ile Leu 90

Phe Lys Val Ile Thr Val Phe Leu Asn His Ser Asn Leu Trp Phe Ala 105 110

Ala Trp Leu Lys Val Phe Tyr Cys Leu Arg Ile Ala Asn Phe Asn His 120

Pro	Leu 130	Phe	Phe	Leu	Met	Lys 135	Arg	Lys	Ile	Ile	Val 140	Leu	Met	Pro	Trp
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Leu Leu Arg Leu Ser Val Leu Val Ser Leu Ser Phe Ser Phe Pro Leu 145 150 155 160

Ser Arg Asp Val Phe Asn Val Tyr Val Asn Ser Ser Ile Pro Ile Pro 165 170 175

Ser Ser Asn Ser Thr Glu Lys Lys Tyr Phe Ser Glu Thr Asn Met Val

Asn Leu Val Phe Phe Tyr Asn Met Gly Ile Phe Val Pro Leu Ile Met 195 200 205

Phe Ile Leu Ala Ala Thr Leu Leu Ile Leu Ser Leu Lys Arg His Thr 210 215 220

Leu His Met Gly Ser Asn Ala Thr Gly Ser Arg Asp Pro Ser Met Lys 235 235 240

Ala His Ile Gly Ala Ile Lys Ala Thr Ser Tyr Phe Leu Ile Leu Tyr 245 250 255

Ile Phe Asn Ala Ile Ala Leu Phe Leu Ser Thr Ser Asn Ile Phe Asp 260 265 270

Thr Tyr Ser Ser Trp Asn Ile Leu Cys Lys Ile Ile Met Ala Ala Tyr 275 280 285

Pro Ala Ser His Ser Val Gln Leu Ile Leu Gly Asn Pro Gly Leu Arg 290 295 300

Arg Ala Trp Lys Arg Phe Gln His Gln Val Pro Leu Tyr Leu Lys Gly 305 310 315 320

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atc Ile	ctt Leu	35 35	agt Ser	ggc	ttc Phe	atc Ile	acg Thr 40	gcc Ala	atc Ile	tat Tyr	GJÀ aaa	gct Ala 45	gag Glu	tgg Trp	gcc Ala	144
agg Arg	ggc Gly 50	aaa Lys	aca Thr	ctc Leu	ccc Pro	act Thr 55	ggt Gly	gac Asp	cgc Arg	att Ile	atg Met 60	ttg Leu	atg Met	ctg Leu	agc Ser	192
ttt Phe 65	tcc Ser	agg Arg	ctc Leu	ttg Leu	cta Leu 70	cag Gln	att Ile	tgg Trp	atg Met	atg Met 75	ctg Leu	gag Glu	aac Asn	att Ile	ttc Phe 80	240
agt [.] Ser	ctg Leu	cta Leu	ttc Phe	cga Arg 85	att Ile	gtt Val	tat Tyr	aac Asn	caa Gln 90	aac Asn	tca Ser	gtg Val	tat Tyr	atc Ile 95	ctc Leu	288
ttc Phe	aaa Lys	gtc Val	atc Ile 100	act Thr	gtc Val	ttt Phe	ctg Leu	aac Asn 105	cat His	tcc Ser	aat Asn	ctc Leu	tgg Trp 110	ttt Phe	gct Ala	336
gcc Ala	tgg Trp	ctc Leu 115	aaa Lys	gtc Val	ttc Phe	tat Tyr	tgt Cys 120	ctt Leu	aga Arg	att Ile	gca Ala	aac Asn 125	ttc Phe	aat Asn	cat His	384
cct Pro	ttg Leu 130	ttc Phe	ttc Phe	ctg Leu	atg Met	aag Lys 135	agg Arg	aaa Lys	atc Ile	ata Ile	gtg Val 140	ctg Leu	atg Met	cct Pro	tgg Trp	432
145		5		501	150	нец	vaı	ser	ьеи	5er 155	Phe	agc Ser	Phe	Pro	Leu 160	480
tcg Ser	aga Arg	gat Asp	gtc Val	ttc Phe 165	aat Asn	gtg Val	tat Tyr	gtg Val	aat Asn 170	agc Ser	tcc Ser	att Ile	cct Pro	atc Ile 175	ccc Pro	528

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			180		014	цуз	гуз	185	Fue	ser	Glu	Thr	Asn 190	Met		576	
		195	ttt Phe	- 110	-7-	ASII	200	стХ	TTE	Phe	Val	Pro 205	Leu	Ile	Met	624	
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225			gga Gly	201	230	nia	1111	стХ	ser	Arg 235	Asp	Pro	Ser	Met	Lys 240	720	
gct Ala	cac His	ata Ile	GJÀ āāā	gcc Ala 245	atc Ile	aaa Lys	gcc Ala	acc Thr	agc Ser 250	tac Tyr	ttt Phe	ctc Leu	atc Ile	ctc Leu 255	tac Tyr	768	
att Ile	ttc Phe	aat Asn	gca Ala 260	att Ile	gct Ala	cta Leu	ttt Phe	ctt Leu 265	tcc Ser	acg Thr	tcc Ser	aac Asn	atc Ile 270	ttt Phe	gac Asp	816	
gct Ala	tac Tyr	agt Ser 275	tcc Ser	tgg Trp	aat Asn	att Ile	ttg Leu 280	tgc Cys	aag Lys	atc Ile	atc Ile	atg Met 285	gct Ala	gcc Ala	tac Tyr	864	
cct Pro	gcc Ala 290	GJA aac	cac His	tca Ser	gta Val	caa Gln 295	ctg Leu	atc Ile	ttg Leu	ggc Gly	aac Asn 300	cct Pro	G1 y ggg	ctg Leu	aga Arg	912	
aga Arg 305	gcc Ala	tgg Trp	aag Lys	cgg Arg	ttt Phe 310	cag Gln	cac His	caa Gln	vaı	cct Pro 315	ctt Leu	tac Tyr	cta Leu	aaa Lys	ggg Gly 320	960	
cag Gln	act Thr	ctg Leu	tga					•								972	

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Lys Val Thr Phe Thr Leu Val Val Ser Gly Ile Glu Cys Ile Thr Gly 20 25 30

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Arg Gly Lys Thr Leu Pro Thr Gly Asp Arg Ile Met Leu Met Leu Ser

50 55 60

Phe Ser Arg Leu Leu Gln Ile Trp Met Met Leu Glu Asn Ile Phe

Ser Leu Leu Phe Arg Ile Val Tyr Asn Gln Asn Ser Val Tyr Ile Leu

Phe Lys Val Ile Thr Val Phe Leu Asn His Ser Asn Leu Trp Phe Ala

Ala Trp Leu Lys Val Phe Tyr Cys Leu Arg Ile Ala Asn Phe Asn His

Pro Leu Phe Phe Leu Met Lys Arg Lys Ile Ile Val Leu Met Pro Trp

Leu Leu Arg Leu Ser Val Leu Val Ser Leu Ser Phe Ser Phe Pro Leu 150

Ser Arg Asp Val Phe Asn Val Tyr Val Asn Ser Ser Ile Pro Ile Pro 170

Ser Ser Asn Ser Thr Glu Lys Lys Tyr Phe Ser Glu Thr Asn Met Val 185

Asn Leu Val Phe Phe Tyr Asn Met Gly Ile Phe Val Pro Leu Ile Met 200

Phe Ile Leu Ala Ala Thr Leu Leu Ile Leu Ser Leu Lys Arg His Thr 215 220

Leu His Met Gly Ser Asn Ala Thr Gly Ser Arg Asp Pro Ser Met Lys 230 235

Ala His Ile Gly Ala Ile Lys Ala Thr Ser Tyr Phe Leu Ile Leu Tyr 250

Ile Phe Asn Ala Ile Ala Leu Phe Leu Ser Thr Ser Asn Ile Phe Asp 265

Ala Tyr Ser Ser Trp Asn Ile Leu Cys Lys Ile Ile Met Ala Ala Tyr

Pro Ala Gly His Ser Val Gln Leu Ile Leu Gly Asn Pro Gly Leu Arg 295

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Gln Thr Leu							
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aag gtc acc tt Lys Val Thr Ph 20	e Thr Leu	gtg gtc Val Val	tcc gga Ser Gly 25	a ata gag y Ile Glu	tgc atc Cys Ile 30	act go Thr Gl	ус 96 -У
atc ctt ggg ag Ile Leu Gly Se 35	t ggc ttc r Gly Phe	atc acc Ile Thr 40	gcc ato Ala Ilo	c tat ggg e Tyr Gly	gct gag Ala Glu 45	tgg gc	cc 144 .a
agg ggc aaa ac Arg Gly Lys Th 50	a ctc ccc r Leu Pro	act ggt Thr Gly 55	gac cgo Asp Ar	c att atg g Ile Met 60	ttg atg Leu Met	ctg ac Leu Se	gc 192 er
ttt tcc agg ct Phe Ser Arg Le 65	c ttg cta u Leu Leu 70	cag att	tgg ate Trp Me	g atg ctg t Met Leu 75	gag aac Glu Asn	att tt Ile Ph 80	ie
agt ctg cta tt Ser Leu Leu Ph	c cga att e Arg Ile 85	gtt tat Val Tyr	aac ca Asn Gli 90	a aac tca n Asn Ser	gtg tat Val Tyr	atc ct Ile Le 95	cc 288 eu
ttc aaa gtc at	c act gtc	ttt ctg	g aac ca	t tcc aat	ctc tgg	ttt g	t 336

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cct Pro	ttg Leu 130	ttc Phe	ttc Phe	ctg Leu	atg Met	aag Lys 135	agg Arg	aaa Lys	atc Ile	ata Ile	gtg Val 140	ctg Leu	atg Met	cct Pro	tgg Trp	432
ctt Leu 145	ctc Leu	agg Arg	ctg Leu	tca Ser	gtg Val 150	ttg Leu	gtt Val	tcc Ser	tta Leu	agc Ser 155	ttc Phe	agc Ser	ttt Phe	cct Pro	ctc Leu 160	480
tcg Ser	aga Arg	gat Asp	gtc Val	ttc Phe 165	aat Asn	gtg Val	tat Tyr	gtg Val	aat Asn 170	agc Ser	tcc Ser	att Ile	cct Pro	atc Ile 175	ccc Pro	528
tcc Ser	tcc Ser	aac Asn	tcc Ser 180	acg Thr	gag Glu	aag Lys	aag Lys	tac Tyr 185	ttc Phe	tat Tyr	gag Glu	acc Thr	aat Asn 190	atg Met	gtc Val	576
aac Asn	ctg Leu	gta Val 195	ttt Phe	ttc Phe	tat Tyr	aac Asn	atg Met 200	GJA aaa	atc Ile	ttc Phe	gtt Val	cct Pro 205	ctg Leu	atc Ile	atg Met	624
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cct Pro	gcc Ala 290	ggc Gly	cac His	tca Ser	gta Val	caa Gln 295	ctg Leu	atc Ile	ttg Leu	ggc Gly	aac Asn 300	cct Pro	GJÀ āāā	ctg Leu	aga Arg	912
aga Arg 305	gcc Ala	tgg Trp	aag Lys	cgg Arg	ttt Phe 310	cag Gln	cac His	caa Gln	gtt Val	cct Pro 315	ctt Leu	tac Tyr	cta Leu	aaa Lys	ggg Gly 320	960
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Arg Gly Lys Thr Leu Pro Thr Gly Asp Arg Ile Met Leu Met Leu Ser 50 55 60

Phe Ser Arg Leu Leu Gln Ile Trp Met Met Leu Glu Asn Ile Phe 65 70 75 80

Ser Leu Leu Phe Arg Ile Val Tyr Asn Gln Asn Ser Val Tyr Ile Leu 85 90 95

Phe Lys Val Ile Thr Val Phe Leu Asn His Ser Asn Leu Trp Phe Ala 100 105 110

Ala Trp Leu Lys Val Phe Tyr Cys Leu Arg Ile Ala Asn Phe Asn His 115 120 125

Pro Leu Phe Phe Leu Met Lys Arg Lys Ile Ile Val Leu Met Pro Trp 130 135 140

Leu Leu Arg Leu Ser Val Leu Val Ser Leu Ser Phe Ser Phe Pro Leu 145 150 155 160

Ser Arg Asp Val Phe Asn Val Tyr Val Asn Ser Ser Ile Pro Ile Pro 165 170 175

Ser Ser Asn Ser Thr Glu Lys Lys Tyr Phe Tyr Glu Thr Asn Met Val

Asn Leu Val Phe Phe Tyr Asn Met Gly Ile Phe Val Pro Leu Ile Met 195 200 205

Phe Ile Leu Ala Ala Thr Leu Leu Ile Leu Ser Leu Lys Arg His Thr 210 215 220

Leu His Met Gly Ser Asn Ala Thr Gly Ser Arg Asp Pro Ser Met Lys Ala His Ile Gly Ala Ile Lys Ala Thr Ser Tyr Phe Leu Ile Leu Tyr 250 Ile Phe Asn Ala Ile Ala Leu Phe Leu Ser Thr Ser Asn Ile Phe Asp Thr Tyr Ser Ser Trp Asn Ile Leu Cys Lys Ile Ile Met Ala Ala Tyr Pro Ala Gly His Ser Val Gln Leu Ile Leu Gly Asn Pro Gly Leu Arg 300 Arg Ala Trp Lys Arg Phe Gln His Gln Val Pro Leu Tyr Leu Lys Gly 315 Gln Thr Leu <210> 179 <211> 972 <212> DNA <213> homo sapiens <220> <221> CDS <222> (1)..(972) <220> <221> variation <222> (560)..(560) <223> SNP <220> <221> variation <222> (817)..(817) <223> SNP <220> <221> variation (871)..(871) <222> <223> SNP <400> 179 atg gca acg gtg aac aca gat gcc aca gat aaa gac ata tcc aag ttc Met Ala Thr Val Asn Thr Asp Ala Thr Asp Lys Asp Ile Ser Lys Phe 48 aag gtc acc ttc act ttg gtg gtc tcc gga ata gag tgc atc act ggc Lys Val Thr Phe Thr Leu Val Val Ser Gly Ile Glu Cys Ile Thr Gly

96

PCT/US2004/019489 302/447 20 25 30

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65					70			1	, He	75	r ne	u GI	u As	n Il	t tto e Phe 80	•
				85				- noi	90	I ASI	n Se	r Va.	l Ty	r Il 95		
			10	0				105	; ;	s sei	r Ası	n Lei	ı Tr _] 110	o Ph O	t gct e Ala	
		11.	5			4	120)	. ALC	1 116	: Ala	125	n Phe 5	As:	t cat n His	
	130					135	9	- 133	± T E	: 176	140	. ьет Э	ı Met	Pro	tgg Trp	432
145	ı				150			DCI	neu	155	Pne	Ser	Phe	Pro	ctc Leu 160	480
				165	•		-,,-	Val	170	ser	Ser	Ile	Pro	11e		528
			180)		-10	233	185	rne	Tyr	Glu	Thr	Asn 190	Met	gtc Val	576
		195			-		200	OTY	TTE	rne	vaı	Pro 205	Leu	Ile		624
	210				acc Thr	215	LCu	*TE	пеа	ser	ьец 220	Lys	Arg	His	Thr	672
225			_		aat Asn 230		****	GTĀ	ser	235	Asp	Pro	Ser	Met	Lys 240	720
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130 135 140

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Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Val Tyr Leu Ser Asp 170

Ala Thr Val Thr Thr Leu Gly Asn Leu Val Pro Phe Thr Leu Thr Leu

Leu Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His

Ile Lys Ala Leu Gln Thr Val Ile Phe Phe Leu Leu Cys Ala Val 230 235

Tyr Phe Leu Ser Ile Met Ile Ser Val Trp Ser Phe Gly Ser Leu Glu 250

Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro

Ser Ile His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Gln 280 285

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tca Ser	atc Ile	cac His 275	cca Pro	ttc Phe	atc Ile	ctg Leu	att Ile 280	Trp	gga Gly	aac Asn	aag Lys	aag Lys 285	Leu	aag Lys	cag Gln	864
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Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu 50 55 60

Asn Trp Tyr Ser Thr Val Phe Asn Pro Ala Phe Tyr Ser Val Glu Val 65 70 75 80

Arg Thr Thr Ala Tyr Asn Val Trp Ala Val Thr Gly His Phe Ser Asn 85 90 95

Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn 100 105 110

Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val 115 , 120 , 125

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Phe Val Ile Asn Met Lys Glu Ile Val Arg Thr Lys Glu Tyr Glu Gly 145 150 155 160

Asn Leu Thr Trp Lys Ile Lys Leu Arg Ser Ala Val Tyr Leu Ser Asp 165 170 175

Ala Thr Val Thr Thr Leu Gly Asn Leu Val Pro Phe Thr Leu Thr Leu 180 185 190

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Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu 50 55 60

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Arg Thr Thr Ala Tyr Asn Val Trp Ala Val Thr Gly His Phe Ser Asn 85 90 95

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Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val 115 , 120 , 125

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Ala Thr Val Thr Thr Leu Gly Asn Leu Val Pro Phe Thr Leu Thr Leu 180 185 190

Leu Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His

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210 215 220

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Tyr Phe Leu Ser Ile Met Ile Ser Val Trp Ser Phe Gly Ser Leu Glu 250

Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro 265

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att gag cgg gtc aag aga caa aag atc tct ttt gct gac cag att ctc Ile Glu Arg Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu 35 40 45	144
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atg Met	cag Gln 210	ctc Leu	cat His	ggt Gly	aaa Lys	gga Gly 215	tct Ser	caa Gln	gat Asp	ctc Leu	agc Ser 220	acc Thr	aag Lys	gtc Val	cac His	672
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- Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro 260 260 270
- Ser Ile His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Gln 275 280 285
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Ala Thr Val Thr Thr Leu Gly Asn Leu Val Pro Phe Thr Leu Thr Leu 180 185 190

Leu Cys Phe Leu Leu Leu Ile Tyr Ser Leu Cys Lys His Leu Lys Lys 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His 210 215 220

Ile Lys Ala Leu Gln Thr Val Ile Phe Phe Leu Leu Cys Ala Val 225 230 235 240

Tyr Phe Leu Ser Ile Met Ile Ser Val Trp Ser Phe Gly Ser Leu Glu 245 250 255

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342/447

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Ile Se	r Phe 195	Leu	Leu	Leu	Ile	Cys 200	Ser	Leu	Суз	Lys	His 205	Leu	Lys	Lys
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caaa	accto	gtc t	tcat	gtto	et go	gaag	gctat	t tg	catto	cagc	tato	cctt	caa d	cca	ccatt	830
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Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr Leu Ser Asn 165 170 175

Thr Thr Val Thr Ile Leu Ala Asn Leu Val Pro Phe Thr Leu Thr Leu 180

Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Met Lys Val His 210 215 220

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Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val 115 120 125

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Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr Leu Ser Asn 165 170 175

Thr Thr Val Thr Ile Leu Ala Asn Leu Val Pro Phe Thr Leu Thr Leu 180 185 190

Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Met Lys Val His 210 215 220

Ile Lys Ala Met Gln Thr Val Thr Ser Phe Leu Leu Leu Cys Ala Ile 225 230 235 240

Tyr Phe Leu Ser Ile Ile Met Ser Val Trp Ser Phe Glu Ser Leu Glu 245 250 255

Asn Lys Pro Val Phe Met Phe Cys Glu Ala Ile Ala Phe Ser Tyr Pro 260 265 270

Ser Thr His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Gln 275 280 285

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332/

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Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn 100 105 110

Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val 115 120 125

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Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr Leu Ser Asn 165 170 175

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Thr	Ala 50	Leu	Ala	Val	Ser	aga Arg 55	yal Val	ggt Gly	tta Leu	ctc Leu	tgg Trp 60	gta Val	tta Leu	gta Val	tta Leu		192
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gtt Val	ctg Leu 130	gtg Val	ata Ile	cta Leu	ttg Leu	ggg Gly 135	cct Pro	ttg Leu	cta Leu	ttt Phe	ttg Leu 140	gtt Val	tgt Cys	cat His	ctt Leu		432
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ata Ile 225	aaa Lys	gct Ala	ttg Leu	caa Gln	act Thr 230	Val	acc Thr	tcc Ser	ttc Phe	ctc Leu 235	Leu	tta Leu	tgt Cys	gcc Ala	att Ile 240		720
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Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Val Leu 50 55 60

Asn Trp Tyr Ala Thr Glu Leu Asn Pro Ala Phe Asn Ser Ile Glu Val 65 70 75 80

Arg Ile Thr Ala Tyr Asn Val Trp Ala Val Ile Asn His Phe Ser Asn 85 90 95

Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn 100 105 110

Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val 115 120 120

Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu 130 135 140

Phe Val Ile Asn Met Asn Gln Ile Ile Trp Thr Lys Glu Tyr Glu Gly 145 150 155 160

Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr Leu Ser Asn 165 170 175

Thr Thr Val Thr Ile Leu Ala Asn Leu Val Pro Phe Thr Leu Thr Leu 180 185 190

Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys

356/447

195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Met Lys Val His 210 215 220

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Leu Cys Ala Ile 225 230 235 240

Tyr Phe Leu Ser Ile Ile Met Ser Val Trp Ser Phe Glu Ser Leu Glu 245 250 255

Asn Lys Pro Val Phe Met Phe Cys Glu Ala Ile Ala Phe Ser Tyr Pro 260 265 270

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act Thr	gct Ala 50	ctg Leu	gca Ala	gto Val	tcc Ser	aga Arg 55	gtt Val	ggt Gly	tta Leu	ctc Leu	tgg Trp 60	gta Val	tta Leu	gta Val	tta Leu	192
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_				85	11011	gtc Val	тър	Ата	90	TTE	Asn	His	Phe	Ser 95	Asn	288
			100		200	agc Ser	116	105	ryr	Leu	Leu	Lys	Ile 110	Ala	Asn	336
		115			0	ctt Leu	120	neu	пĀг	Arg	Arg	Val 125	Lys	Ser	Val	384
	130			200	JCu	ggg Gly 135	FIO	ьец	тей	Phe	Leu 140	Val	Cys	His	Leu	432
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			180	110	neu	gca Ala	ASI	185	vaı	Pro	Phe	Thr	Leu 190	Thr	Leu	576
		195		Dea	Dea	atc Ile	200	ser	ьеи	Cys	Lys	His 205	Leu	Lys	ГÀЗ	624
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ac 'yr	ttt Phe	ctg Leu	tcc Ser	ata Ile 245	atc Ile	atg Met	tca Ser	gtt Val	tag	agtt	ttga	ga g	tctg	gaaa	a	770

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Ile Glu Trp 35	Val Lys	Arg Gln Ly	vs Ile Ser	Phe Ala Asp 45	Gln Ile Leu
Thr Ala Leu 50	Ala Val	Ser Arg Va 55	l Gly Leu	Leu Trp Val	Leu Val Leu
Asn Trp Tyr 65	Ala Thr	Glu Leu As 70	n Pro Ala	Phe Asn Ser 75	Ile Glu Val 80
Arg Ile Thr	Ala Tyr 85	Asn Val Tr	p Ala Val 90	Ile Asn His	Phe Ser Asn 95
Trp Leu Ala	Thr Ser	Leu Ser Il	e Phe Tyr 105	Leu Leu Lys	Ile Ala Asn 110
Phe Ser Asn 115	Leu Ile 1	Phe Leu Hi 12	s Leu Lys O	Arg Arg Val 125	Lys Ser Val
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Asn Met Thr	Trp Lys I 165	lle Lys Lev	Arg Ser 170	Ala Met Tyr	Leu Ser Asn 175
Thr Thr Val 1	Thr Ile I 180	eu Ala Asr	Leu Val		Leu Thr Leu 190

Ile Se	r Phe 195	Leu	Leu	Leu	Ile	Cys 200	Ser	Leu	Суз	Lys	His 205	Leu	Lys	Lys	
Met Gl 21	n Leu O	His	Gly	Lys	Gly 215	\ Ser	Gln	Asp	Pro	Ser 220	Met	Lys	Val	His	
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att gad Ile Gli	g tgg 1 Trp 35	gtc Val	aag Lys	aga Arg	caa Gln	aag Lys 40	atc Ile	tcc Ser	ttt Phe	gtt Val	gac Asp 45	caa Gln	att Ile	ctc Leu	144
act gct Thr Ala 50	ctg Leu	gcg Ala	gtc Val	tcc Ser	aga Arg 55	gtt Val	ggt Gly	ttg Leu	ctc Leu	tgg Trp 60	gtg Val	tta Leu	tta Leu	cta Leu	192
cat tg	g tat	gca	act	cag	ttg	aat	cca	gct	ttt	tat	agt	gta	gaa	gta	240

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ata Ile 225	aaa Lys	gct Ala	ttg Leu	caa Gln	act Thr 230	gtg Val	acc Thr	tcc Ser	ttt Phe	ctt Leu 235	ctg Leu	tta Leu	tgt Cys	gcc Ala	att Ile 240	720
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agc Ser	ctt Leu	cgt Arg	ctc Leu	cat His	aga Arg	ttc Phe	aca Thr	aga Arg	GJ À aaa	gca Ala	ttg Leu	tgt Cys	gtc Val	ttc Phe	tag	960

361/447

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Ile Glu Trp Val Lys Arg Gln Lys Ile Ser Phe Val Asp Gln Ile Leu 35 40 45

Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu 50 55 60

His Trp Tyr Ala Thr Gln Leu Asn Pro Ala Phe Tyr Ser Val Glu Val 65 70 75 80

Arg Ile Thr Ala Tyr Asn Val Trp Ala Val Thr Asn His Phe Ser Ser 85 90 95

Trp Leu Ala Thr Ser Leu Ser Met Phe Tyr Leu Leu Arg Ile Ala Asn 100 105 110

Phe Ser Asn Leu Ile Phe Leu Arg Ile Lys Arg Arg Val Lys Ser Val 115 120 125

Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu 130 135 140

Phe Val Ile Asn Met Asp Glu Thr Val Trp Thr Lys Glu Tyr Glu Gly 145 150 155 160

Asn Val Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr His Ser Asn 165 170 175

Met Thr Leu Thr Met Leu Ala Asn Phe Val Pro Leu Thr Leu Thr Leu 180 185 190

Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His 215

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Leu Cys Ala Ile

Tyr Phe Leu Ser Met Ile Ile Ser Val Cys Asn Leu Gly Arg Leu Glu 250

Lys Gln Pro Val Phe Met Phe Cys Gln Ala Ile Ile Phe Ser Tyr Pro 265

Ser Thr His Pro Phe Ile Leu Ile Leu Gly Asn Lys Lys Leu Lys Gln

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WO 2003/00/891	363/447		PCT/US2004/019489
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Mec	act Thr	теп	180	Met	ren	Ala	Asn	Phe 185	Val	Pro	Leu	Thr	Leu 190	Thr	Leu	576
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864

912

960

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agc Ser 305	ctt Leu	cgt Arg	ctc Leu	cat His	aga Arg 310	ttc Phe	aca Thr	aga Arg	ggg ggg	gca Ala 315	ttg Leu	tgt Cys	gtc Val	ttc Phe	tag
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Ile	Glu	Trp 35	Val	Lys	Arg	Gln	Lys 40	Ile	Ser	Phe	Val	Asp 45	Gln	Ile	Leu
Thr	Ala 50	Leu	Ala	Val	Ser	Arg 55	Val	Gly	Leu	Leu	Trp 60	Val	Leụ	Leu	Leu
His 65	Trp	Туг	Ala	Thr	Gln 70	Leu	Asn	Pro	Ala	Phe 75	Tyr	Ser	Val	Glu	Val 80
Arg	Ile	Thr	Ala	Tyr 85	Asn	Val	Trp	Ala	Val 90	Thr	Asn	His	Phe	Ser 95	Ser
Trp	Leu	Ala	Thr 100	,Ser	Leu	Ser	Met	Phe 105	Tyr	Leu	Leu	Arg	Ile 110	Ala	Asn
Phe	Ser	Asn 115	Leu	Ile	Phe	Leu	Arg 120	Ile	Lys	Arg	Arg	Val 125	Lys	Ser	Val
Val	Leu 130	Val	Ile	Leu	Leu	Gly 135	Pro	Leu	Leu	Phe	Leu 140	Val	Суз	His	Leu
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Met Thr Leu Thr Met Leu Ala Asn Phe Val Pro Leu Thr Leu Thr Leu 180 185

Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys 195

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His 210 215

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Leu Cys Ala Ile 230 235

Tyr Phe Leu Ser Met Ile Ile Ser Val Cys Asn Phe Gly Arg Leu Glu 245 250

Lys Gln Pro Val Phe Met Phe Cys Gln Ala Ile Ile Phe Ser Tyr Pro 260 265

Ser Thr His Pro Phe Ile Leu Ile Leu Gly Asn Lys Lys Leu Lys Gln 275 280

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		1111	nia	85	ASII	vaı	Trp	ĄТа	90	Thr	Asn	His	Phe	agc Ser 95	Ser	288
	cu	n.a	100	ser.	Leu	ser	Met	105	Tyr	Leu	Leu	Arg	Ile 110	gcc Ala	Asn	336
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ago Ser 305	ctt Leu	cgt Arg	ctc Leu	cat His	aga Arg 310	ttc Phe	aca Thr	aga Arg	GJ À aaa	gca Ala 315	ttg Leu	tgt Cys	gtc Val	ttc Phe	tag	960
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Thr	Ala 50	Leu	Ala	Val	Ser	Arg 55	Val	Gly	Leu	Leu	Trp 60	Val	Leu	Leu	Leu	
His 65	Trp	Tyr	Ala	Thr	Gln 70	Leu	Asn	Pro	Ala	Phe 75	Туг	Ser	Val	Glu	Val 80	
Arg	Ile	Thr	Ala	Tyr 85	Asn	Val	Trp	Ala	Val 90	Thr	Asn	His	Phe	Ser 95	Ser	
Trp	Leu	Ala	Thr 100	Ser	Leu	Ser	Met	Phe 105	Tyr	Leu	Leu	Arg	Ile 110	Ala	Asn	

Phe Ser Asn Leu Ile Phe Leu Arg Ile Lys Arg Arg Val Lys Ser Val

125

115 120

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Phe Val Ile Asn Met Asp Glu Thr Val Trp Thr Lys Glu Tyr Glu Gly 145 150 155 160

Asn Val Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr His Ser Asn 165 170 175

Met Thr Leu Thr Met Leu Ala Asn Phe Val Pro Leu Thr Leu 180 185 190

Val Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His 210 215 220

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Leu Cys Ala Ile 225 230 235 240

Tyr Phe Leu Ser Met Ile Ile Ser Val Cys Asn Leu Gly Arg Leu Glu 245 250 255

Lys Gln Pro Val Phe Met Phe Cys Gln Ala Ile Ile Phe Ser Tyr Pro 260 265 270

Ser Thr His Pro Phe Ile Leu Ile Leu Gly Asn Lys Lys Leu Lys Gln 275 280 285

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aag Lys	caa Gln	cct Pro	gtc Val 260	ttc Phe	atg Met	ttc Phe	tgc Cys	caa Gln 265	gct Ala	att Ile	ata Ile	ttc Phe	agc Ser 270	tat Tyr	cct Pro	816
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agc Ser 305	ctt Leu	cgt Arg	ctc Leu	cat His	aga Arg 310	ttc Phe	aca Thr	aga Arg	Gl ^à aaa	gca Ala 315	ttg Leu	tgt Cys	gtc Val	ttc Phe	tag	960
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His 65	Trp	Tyr	Ala	Thr	Gln 70	Leu	Asn	Pro	Ala	Phe 75	Tyr	Ser	Val	Glu	Val 80	

Arg	Ile	Thr	Ala	Tyr 85	Asn	Val	Trp	Ala	Val 90	Thr	Asn	His	Phe	Ser 95	Ser	
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- Phe Val Ile Asn Met Asp Glu Thr Val Trp Thr Lys Glu Tyr Glu Gly 145 150 155 160
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- Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His 210 215 220
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gtt c Val I 1	etg eu .30	gtg Val	ata Ile	ctg Leu	ttg Leu	ggg Gly 135	ccc Pro	ttg Leu	gta Val	ttt Phe	ttg Leu 140	ı Ile	tgt Cys	: aat 8 Asr	cti Lei	<u>.</u> 1	432
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Leu Trp Tyr Ala Thr Val Phe Asn Ser Ala Leu Tyr Gly Leu Glu Val

Arg Ile Val Ala Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Met

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Phe Ser Asn Leu Ile Ser Leu His Leu Lys Lys Arg Ile Lys Ser Val 115

Val Leu Val Ile Leu Leu Gly Pro Leu Val Phe Leu Ile Cys Asn Leu

Ala Val Ile Thr Met Asp Glu Arg Val Trp Thr Lys Glu Tyr Glu Gly 155

Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Ser 170

WO 2005/007891 PCT/US2004/019489 375/447

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Phe Ser Asn Leu Ile Ser Leu His Leu Lys Lys Arg Ile Lys Ser Val

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382/447

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ctt to Leu T: 65	gg tai	gca Ala	act Thr	gtg Val 70	ttt Phe	aat Asn	tct Ser	gct Ala	tta Leu 75	tat Tyr	ggt Gly	tta Leu	gaa Glu	gta Val 80	2	40
aga a Arg I	tt gti le Val	gct L Ala	tct Ser	aat Asn	gcc Ala	tgg Trp	gct Ala	gta Val	acg Thr	aac Asn	cat His	ttc Phe	agc Ser	atg Met	2	88

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gtt Val	ctg Leu 130	gtg Val	ata Ile	ctg Leu	ttg Leu	ggg Gly 135	ccc Pro	ttg Leu	gta Val	ttt Phe	ttg Leu 140	att Ile	tgt Cys	aat Asn	ctt Leu	•	432
gct Ala 145	gtg Val	ata Ile	acc Thr	atg Met	gat Asp 150	gag Glu	aga Arg	gtg Val	tgg Trp	aca Thr 155	aaa Lys	gaa Glu	tat Tyr	gaa Glu	gga Gly 160		480
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Thr	Ala 50	Leu	Val	Val	Ser	Arg 55	Ile	Gly	Leu	Leu	Trp 60	Val	Met	Leu	Phe
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Arg	Ile	Val	Ala	Ser 85	Asn	Ala	Trp	Ala	Val 90	Thr	Asn	His	Phe	Ser 95	Met
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Phe	Ser	Asn 115	Leu	Ile	Ser	Leu	His 120	Leu	Lys	Lys	Arg	Ile 125	Lys	Ser	Val
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Met	Arg 210	Leu	His	Ser	Lys	Gly 215	Ser	Gln	Asp	Pro	Ser 220	Thr	Lys	Val	His

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Met Leu Phe Ala Ile 225 230 230

PCT/US2004/019489

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ttt Phe	gtt Val	ctt Leu	gga Gly 20	aat Asn	gtt Val	gcc Ala	aat Asn	ggc Gly 25	ttc Phe	ata Ile	gcc Ala	cta Leu	gta Val 30	aat Asn	atc Ile	96
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act Thr	gct Ala 50	ctg Leu	gtg Val	gtc Val	tcc Ser	aga Arg 55	att Ile	ggt Gly	tta Leu	ctc Leu	tgg Trp 60	gtc Val	atg Met	tta Leu	ttc Phe	192
65		- 7 2	nia	1111	70	Pne	Asn	Ser	Ala	Leu 75	Tyr	Gly	Leu	Glu	80	240
,				85	ASII	ALG	пр	ATA	90	Thr	Asn	His	Phe	Ser 95		288
•			100	Der	пеа	ser	тте	105	Cys	Leu	Leu	ГЛЗ	Ile 110	Ala	Asn	336
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ata Ile	tgt Cys	ttt Phe	ctg Leu	ctg Leu	tta Leu	atc Ile	tgt Cys	tct Ser	ctt Leu	tgt Cys	aaa Lys	cat His	ctc Leu	aag Lys	aag Lys	624

395/447

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ata Ile 225	aaa Lys	gct Ala	ttg Leu	caa Gln	act Thr 230	gtg Val	acc Thr	tcc Ser	ttc Phe	ctc Leu 235	atg Met	tta Leu	ttt Phe	gcc Ala	att Ile 240	720
tac Tyr	ttt Phe	ctg Leu	tgt Cys	ata Ile 245	atc Ile	aca Thr	tca Ser	act Thr	tgg Trp 250	aat Asn	ctt Leu	agg Arg	aca Thr	cag Gln 255	cag Gln	768
Del	пуs	ctt Leu	260	цец	ьец	ьеи	Cys	GIn 265	Thr	Val	Ala	Ile	Met 270	Tyr	Pro	816
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Phe	Val	Leu	Gly 20	Asn	Val	Ala	Asn	Gly	Pho							
Ile								25	rne	Ile	Ala	Leu	Val 30	Asn	Ile	
	Asp	Trp 35	Val	Asn	Thr	Arg	Lys 40	25					30			
		Trp 35 Leu					40	25 Ile	Ser	Ser	Ala	Glu 45	30 Gln	Ile	Leu	
Thr	Ala 50	33	Val	Val	Ser	Arg 55	Ile	25 Ile Gly	Ser Leu	Ser Leu	Ala Trp 60	Glu 45 Val	30 Gln Met	Ile Leu	Leu Phe	
Thr Leu 65	Ala 50 Trp	Leu	Val Ala	Val Thr	Ser Val 70	Arg 55 Phe	Ile Asn	Ile Gly Ser	Ser Leu Ala	Ser Leu Leu 75	Ala Trp 60	Glu 45 Val Gly	30 Gln Met Leu	Ile Leu Glu	Leu Phe Val 80	

Phe	Ser	Asn	Leu	Ile	Ser	Leu	His	Leu	Lvs	īvs	Ara	Ile	Lvs	Ser	Val
		115					120	-		~,_	9	125	, 0	001	Vul

Val Leu Val Ile Leu Leu Gly Pro Leu Val Phe Leu Ile Cys Asn Leu 130 135

Ala Val Ile Thr Met Asp Glu Arg Val Trp Thr Lys Glu Tyr Glu Gly 150

Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Ser 165 170

Leu Thr Val Thr Thr Leu Ala Asn Leu Ile Pro Phe Thr Leu Ser Leu 180

Ile Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys 195

Met Arg Leu His Ser Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His

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Tyr Phe Leu Cys Ile Ile Thr Ser Thr Trp Asn Leu Arg Thr Gln Gln 245 250

Ser Lys Leu Val Leu Leu Cys Gln Thr Val Ala Ile Met Tyr Pro 265 270

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Phe Val Leu Gly Asn Val Ala Asn Gly Phe Ile Ala Leu Val Asn Ile
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Ile Asp Trp Val Asn Thr Arg Lys Ile Ser Ser Ala Glu Gln Ile Leu
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Thr Ala Leu Val Val Ser Arg Ile Gly Leu Leu Trp Val Met Leu Phe
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0	tcc Ser	115	neu	116	ser	теп	120	ьеи	Lys	Lys	Arg	Ile 125	Lys	Ser	Val	384
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tca Ser	ttc Phe	cac His 275	tca Ser	ttc Phe	atc Ile	ctg Leu	att Ile 280	atg Met	gga Gly	agt Ser	agg Arg	aag Lys 285	cta Leu	aaa Lys	cag Gln	864
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Arg Ile Val Ala Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Met 85 90 95

Trp Leu Ala Ala Ser Leu Ser Ile Phe Cys Leu Leu Lys Ile Ala Asn 100 105 110

Phe Ser Asn Leu Ile Ser Leu His Leu Lys Lys Arg Ile Lys Ser Val 115 120 125

Val Leu Val Ile Leu Leu Gly Pro Leu Val Phe Leu Ile Cys Asn Leu 130 135 140

Ala Val Ile Thr Met Asp Glu Arg Val Trp Thr Lys Glu Tyr Glu Gly 145 150 155 160

Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Ser 165 170 175

Leu Thr Val Thr Thr Leu Ala Asn Leu Ile Pro Phe Thr Leu Ser Leu 180 185 190

Ile Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys 195 200 205

Met Arg Leu His Ser Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His 210 220

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Met Leu Phe Ala Thr 230 Tyr Phe Leu Cys Ile Ile Thr Ser Thr Trp Asn Leu Arg Thr Gln Gln 245 250 Ser Lys Leu Val Leu Leu Cys Gln Thr Val Ala Ile Met Tyr Pro Ser Phe His Ser Phe Ile Leu Ile Met Gly Ser Arg Lys Leu Lys Gln Thr Phe Leu Ser Val Leu Trp Gln Met Thr Arg 295 <210> 237 <211> 900 <212> DNA <213> homo sapiens <220> <221> CDS <222> (1)..(900) <220> <221> variation <222> (94)..(94) <223> SNP <220> <221> variation <222> (113)..(113) <223> SNP <220> <221> variation <222> (376)..(376) <223> SNP <220> <221> variation <222> (456)..(456) <223> SNP <220> <221> variation <222> (673)..(673) <223> SNP <220> <221> variation

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	165	-		170	ata cac ctt Ile His Leu	tca agc 528 Ser Ser 175
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Arg Ile Val Ala Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Met 85 90 95

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Ile	Cys	Phe 195	Leu	Leu	Leu	Ile	Cys 200	Ser	Leu	Суз	Lys	His 205	Leu	Lys	Lys
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Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Met His Leu Ser Asn 165 170 175

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Ala Ala Leu Ala Val Ser Lys Val Gly Leu Leu Trp Val Ile Leu Leu 50 60

His Trp Tyr Ser Thr Val Leu Asn Pro Thr Ser Ser Asn Leu Lys Val 65 70 75 80

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rne	var	ьец	20	Asn	Pue	gcc Ala	Asn	Gly 25	Phe	Ile	Ala	Leu	Val 30	Asn	Phe	96
att Ile	gac Asp	tgg Trp 35	gtg Val	aag Lys	aga Arg	aaa Lys	aag Lys 40	atc Ile	tcc Ser	tca Ser	gct Ala	gac Asp 45	caa Gln	att Ile	ctc Leu	144
act Thr	gct Ala 50	ctg Leu	gcg Ala	gtc Val	tcc Ser	aga Arg 55	att Ile	ggt Gly	ttg Leu	ctc Leu	tgg Trp 60	gca Ala	tta Leu	tta Leu	tta Leu	192
aat Asn 65	tgg Trp	tat Tyr	tta Leu	act Thr	gtg Val 70	ttg Leu	aat Asn	cca Pro	gct Ala	ttt Phe 75	tat Tyr	agt Ser	gta Val	gaa Glu	tta Leu 80	240
aga Arg	att Ile	act Thr	tct Ser	tat Tyr 85	aat Asn	gcc Ala	tgg Trp	gtt Val	gta Val 90	acc Thr	aac Asn	cat His	ttc Phe	agc Ser 95	atg Met	288
tgg Trp	ctt Leu	gct Ala	gct Ala 100	aac Asn	ctc Leu	agc Ser	ata Ile	ttt Phe 105	tat Tyr	ttg Leu	ctc Leu	aag Lys	att Ile 110	gcc Ala	aat Asn	336
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att Ile	ctg Leu 130	gtg Val	ata Ile	ctg Leu	ttg Leu	ggg Gly 135	act Thr	ttg Leu	ata Ile	ttt Phe	ttg Leu 140	gtt Val	tgt Cys	cat His	ctt Leu	432
ctt Leu 145	gtg Val	gca Ala	aac Asn	atg Met	gat Asp 150	gag Glu	agt Ser	atg Met	tgg Trp	gca Ala 155	gaa Glu	gaa Glu	tat Tyr	gaa Glu	gga Gly 160	480
aac Asn	atg Met	act Thr	gj aaa	aag Lys 165	atg Met	aaa Lys	ttg Leu	agg Arg	aat Asn 170	aca Thr	gta Val	cat His	ctt Leu	tca Ser 175	tat Tyr	528
ttg Leu	act Thr	gta Val	act Thr 180	acc Thr	cta Leu	tgg Trp	agc Ser	ttc Phe 185	ata Ile	ccc Pro	ttt Phe	act Thr	ctg Leu 190	tcc Ser	ctg Leu	576
ata Ile	tct Ser	ttt Phe 195	ctg Leu	atg Met	cta Leu	atc Ile	tgt Cys 200	tct Ser	ctg Leu	tgt Cys	aaa Lys	cat His 205	ctc Leu	aag Lys	aag Lys	624
atg Met	cag Gln 210	ctc Leu	cat His	gga Gly	gaa Glu	gga Gly 215	tcg Ser	caa Gln	gat Asp	ctc Leu	agc Ser 220	acc Thr	aag Lys	gtc Val	cac His	672
ata Ile 225	aaa Lys	gct Ala	ttg Leu	caa Gln	act Thr 230	ctg Leu	atc Ile	tcc Ser	ttc Phe	ctc Leu 235	ttg Leu	tta Leu	tgt Cys	gcc Ala	att Ile 240	720

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				260		1100	Val	ser	265	Ата	vaı.	GТĀ	Asn	ata Ile 270	Tyr	Leu	816
			275	501	1116	116	ьеи	280	Trp	Arg	Thr	Lys	Lys 285	cta Leu	aaa Lys	cac His	864
a c Th	cc hr	ttt Phe 290	ctt Leu	ttg Leu	att Ile	ttg Leu	tgt Cys 295	cag Gln	att Ile	agg Arg	tgc Cys	tga					900
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11	Le	Asp	Trp 35	Val	Lys	Arg	Lys	Lys 40	Ile	Ser	Ser	Ala	Asp 45	Gln	Ile	Leu	
Th	ır	Ala 50	Leu	Ala	Val	Ser	Arg 55	Ile	Gly	Leu	Leu	Trp 60	Ala	Leu	Leu	Leu	
As 65	in j	Trp	Tyr	Leu	Thr	Val 70	Leu	Asn	Pro	Ala	Phe 75	Tyr	Ser	Val	Glu	Leu 80	
Ar	g	Ile	Thr	Ser	Tyr 85	Asn	Ala	Trp	Val	Val 90	Thr	Asn	His	Phe	Ser 95	Met	
Tr	q	Leu	Ala	Ala 100	Asn	Leu	Ser	Ile	Phe 105	Tyr	Leu	Leu	Lys	Ile 110	Ala	Asn	
Ph	e.	Ser	Asn 115	Leu	Leu	Phe	Leu	His 120	Leu	Lys	Arg	Arg	Val 125	Arg	Ser	Val	
II.	e :	Leu 130	Val	Ile	Leu ,	Leu	Gly 135	Thr	Leu	Ile	Phe	Leu 140	Val	Cys	His	Leu	

Leu Val Ala Asn Met Asp Glu Ser Met Trp Ala Glu Glu Tyr Glu Gly

145 150 155 160

Asn Met Thr Gly Lys Met Lys Leu Arg Asn Thr Val His Leu Ser Tyr 165 170 175

Leu Thr Val Thr Thr Leu Trp Ser Phe Ile Pro Phe Thr Leu Ser Leu 180 185 190

Ile Ser Phe Leu Met Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys 195 200 205

Met Gln Leu His Gly Glu Gly Ser Gln Asp Leu Ser Thr Lys Val His 210 215 220

Ile Lys Ala Leu Gln Thr Leu Ile Ser Phe Leu Leu Cys Ala Ile 225 230 235 240

Phe Phe Leu Phe Leu Ile Val Ser Val Trp Ser Pro Arg Arg Leu Arg 245 250 255

Asn Asp Pro Val Val Met Val Ser Lys Ala Val Gly Asn Ile Tyr Leu 260 265 270

Ala Phe Asp Ser Phe Ile Leu Ile Trp Arg Thr Lys Lys Leu Lys His 275 280 285

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Mec Tre II	r Pne Let	ı Tyr Ile	Phe Phe	Ser Ile	Leu Ile	Met Val	Leu	
1	5			10		15		
ttt gtt ct	c gga aad	ttt gcc	aat ggc	ttc ata	gca ctg	qta aat	ttc	96
Phe Val Le	u Gly Asr	ı Phe Ala	Asn Gly	Phe Ile	Ala Leu	Val Asn	Pho	20
	20		25			30	1110	
att gac to	g gtg aag	g aga aaa	aag atc	tcc tca	got gac	caa att	ata 1	
Ile Asp Tr	p Val Lys	Arg Lys	Lvs Ile	Ser Ser	Ala Asp	Gln Tlo	Ton	.44
35			40		45	OTH TIE	ьеu	
act gct ct	g gcg gto	tcc aga	att ggt	tta ctc	taa aca	++- ++-	<u> </u>	~~
Thr Ala Le	u Ala Val	Ser Ara	Tle Glv	Len Len	Tro Nia	Tou Tou	tta 1	.92
50		55	THE CTY	пса пеа	60 ATA	теп тел	ьeu	
		•			00			
aat too ta	t tta act	ata tta	22t aan					
aat tgg ta	r Leu Th	. yey ccy	Aar Doo	get ttt	tat agt	gta gaa	tta 2	240
Asn Trp Ty	- 20u 1111	70	ASII Pro		Tyr Ser	Val Glu	Leu	
		70		75			80	
aga att ag	+ + -+ + -+			_				
aga att ac	or Con Mari	aat gcc	tgg gtt	gta acc	aac cat	ttc agc	atg 2	88
Arg Ile Th	T DET IN	: Asn Ala	Trp Val	Val Thr	Asn His	Phe Ser	Met	
	85			90		95		
+ mm - ml. b		_						
tgg ctt gc	t gct aad	ctc agc	ata ttt	tat ttg	ctc aag	att gcc	aat 3	336
Trp Leu Al	a Ala Asi	Leu Ser	Ile Phe	Tyr Leu	Leu Lys	Ile Ala	Asn	
	100		105		-	110		
ttc tcc aa	c ctt ctt	ttt ctt	cat tta	aag agg	aga gtt	ann ant	ata 3	884
Phe Ser As	n Leu Lei	Phe Leu	His Leu	Lvs Arg	Ara Val	Arg Sor	yee s	004
11	5		120	-19	125	rrd per	val	
					120			
att ctg gt	g ata cto	r tta aaa	act ttg	ata ttt	++~ ~++			
Ile Leu Va	l Ile Lei	Leu Gly	Thr Leu	Tle Pho	Tou Wal	Con III	CTT 4	32
130		135	THE DEG	TIE LUE		Cys His	Leu	
		100			140			
ctt ata ac	a aac ato	r dat dad	agt atg	+~~ ~~-				
ctt gtg gc	a Asp Met	yac gag	age acg	rgg gca	gaa gaa	tat gaa	gga 4	80
Leu Val Al 145	a mon met	. ASP GIU	ser Met	Trp Ala	GIU GIU	Tyr Glu	Gly	
		150		155			160	
220 2to 25	+							
aac atg ac	L ggg aag	g atg aaa	ttg agg	aat aca	gta cat	ctt tca	tat 5	28
Asn Met Th	т ета га	Met Lys	Leu Arg	Asn Thr	Val His	Leu Ser	Tyr	
	165)		170		175	_	
ttg act gt	a act acc	cta tgg	agc ttc	ata ccc	ttt act	cta tcc	cta 5	76
Leu Thr Va	T IUL IUI	: Leu Trp	Ser Phe	Ile Pro	Phe Thr	Leu Ser	Leu	
	180		185			190		
ata tot tt	t ctg ato	rcta atc	tgt tct	ctg tat	aaa cat	ctc aac	330 6	2.4
Ile Ser Ph	e Leu Met	Leu Ile	Cys Ser	Leu Tvr	Lys Hie	Ten Tre	Lug 0	24
19	5		200	1-	205	neg nys	пλя	
			-		203			
atg cag ct	c cat gos	gaa gga	tcg caa	cat ctc	200 20=	224		
Met Gln Le	u His Gly	Glu Glu	Ser Cla	Agn To-	ayu auc	aag gtc	cac 6	72
210	- 3	215	202 0111	วิก กุยก	220	тла лят	HlS	
		220			22U			
ata aaa go	t tto cas	act ctc	atc too	tta -t-		4		_
5-	5	0.9	400 000	THE GLE	rrd tta	rgt gcc	att 7	20

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aat Asn	gac Asp	cca Pro	gtt Val 260	gtc Val	atg Met	gtt Val	agc Ser	aag Lys 265	gct Ala	gtt Val	gga Gly	aac Asn	ata Ile 270	tat Tyr	ctt Leu	816
gca Ala	ttc Phe	gac Asp 275	tca Ser	ttc Phe	atc Ile	cta Leu	att Ile 280	tgg Trp	aga Arg	acc Thr	aag Lys	aag Lys 285	cta Leu	aaa Lys	cac His	864
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Phe	Val	Leu	Gly 20	Asn	Phe	Ala	Asn	Gly 25	Phe	Ile	Ala	Leu	Val 30	Asn	Phe	
Ile	Asp	Trp 35	Val	Lys	Arg	Lys	Lys 40	Ile	Ser	Ser	Ala	Asp 45	Gln	Ile	Leu	
Thr	Ala 50	Leu	Ala	Val	Ser	Arg 55	Ile	Gly	Leu	Leu	Trp 60	Ala	Leu	Leu	Leu	
Asn 65	Trp	Tyr	Leu	Thr	Val 70	Leu	Asn	Pro	Ala	Phe 75	Tyr	Ser	Val	Glu	Leu 80	
Arg	Ile	Thr	Ser	Tyr 85	Asn	Ala	Trp	Val	Val 90	Thr	Asn	His	Phe	Ser 95	Met	
Trp	Leu	Ala	Ala 100	Asn	Leu	Ser	Ile	Phe 105	Tyr	Leu	Leu	Lys	Ile 110	Ala	Asn	
Phe	Ser	Asn 115	Leu	Leu	Phe	Leu	His 120	Leu	Lys	Arg	Arg	Val 125	Arg	Ser	Val	

Ile Leu Val Ile Leu Leu Gly Thr Leu Ile Phe Leu Val Cys His Leu 130 135 140

Leu Val Ala Asn Met Asp Glu Ser Met Trp Ala Glu Glu Tyr Glu Gly 150 Asn Met Thr Gly Lys Met Lys Leu Arg Asn Thr Val His Leu Ser Tyr Leu Thr Val Thr Thr Leu Trp Ser Phe Ile Pro Phe Thr Leu Ser Leu 180 185 Ile Ser Phe Leu Met Leu Ile Cys Ser Leu Tyr Lys His Leu Lys Lys 195 200 Met Gln Leu His Gly Glu Gly Ser Gln Asp Leu Ser Thr Lys Val His 210 Ile Lys Ala Leu Gln Thr Leu Ile Ser Phe Leu Leu Leu Cys Ala Ile 225 235 240 Phe Phe Leu Phe Leu Ile Val Ser Val Trp Ser Pro Arg Arg Leu Arg 245 250 Asn Asp Pro Val Val Met Val Ser Lys Ala Val Gly Asn Ile Tyr Leu 260 265 270 Ala Phe Asp Ser Phe Ile Leu Ile Trp Arg Thr Lys Lys Leu Lys His 275 280 285 Thr Phe Leu Leu Ile Leu Cys Gln Ile Arg Cys 290 295 <210> 257 <211> 900 <212> DNA <213> homo sapiens <220> <221> CDS <222> (1)..(900) <220> <221> variation <222> (155)..(155) <223> SNP <220> <221> variation <222> (181)..(181)

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ttt Phe	gtt Val	ctc Leu	gga Gly 20	aac Asn	ttt Phe	gcc Ala	aat Asn	ggc Gly 25	ttc Phe	ata Ile	gca Ala	ctg Leu	gta Val 30	aat Asn	ttc Phe	96	5
att Ile	gac Asp	tgg Trp 35	gtg Val	aag Lys	aga Arg	aaa Lys	aag Lys 40	atc Ile	tcc Ser	tca Ser	gct Ala	gac Asp 45	caa Gln	att Ile	ctc Leu	144	4
act Thr	gct Ala 50	ctg Leu	gcg Ala	gtc Val	tcc Ser	aga Arg 55	att Ile	ggt Gly	ttg Leu	ctc Leu	tgg Trp 60	tca Ser	tta Leu	tta Leu	tta Leu	192	2
aat Asn 65	tgg Trp	tat Tyr	tta Leu	act Thr	gtg Val 70	ttg Leu	aat Asn	cca Pro	gct Ala	ttt Phe 75	tat Tyr	agt Ser	gta Val	gaa Glu	tta Leu 80	240)
aga Arg	att Ile	act Thr	tct Ser	tat Tyr 85	aat Asn	gcc Ala	tgg Trp	gtt Val	gta Val 90	acc Thr	aac Asn	cat His	ttc Phe	agc Ser 95	atg Met	288	3
tgg Trp	ctt Leu	gct Ala	gct Ala 100	aac Asn	ctc Leu	agc Ser	ata Ile	ttt Phe 105	tat Tyr	ttg Leu	ctc Leu	aag Lys	att Ile 110	gcc Ala	aat Asn	336	5
ttc Phe	tcc Ser	aac Asn 115	ctt Leu	ctt Leu	ttt Phe	ctt Leu	cat His 120	tta Leu	aag Lys	agg Arg	aga Arg	gtt Val 125	agg Arg	agt Ser	gtc Val	384	Į
att Ile	ctg Leu 130	gtg Val	ata Ile	ctg Leu	ttg Leu	ggg Gly 135	act Thr	ьeu	ata Ile	Phe	Leu	Val	tgt Cys	cat His	ctt Leu	432	2
ctt Leu 145	gtg Val	gca Ala	aac Asn	atg Met	gat Asp 150	gag Glu	agt Ser	atg Met	tgg Trp	gca Ala 155	gaa Glu	gaa Glu	tat Tyr	gaa Glu	gga Gly 160	480)
aac Asn	atg Met	act Thr	GJÀ āāā	aag Lys 165	atg Met	aaa Lys	ttg Leu	agg Arg	aat Asn 170	aca Thr	gta Val	cat His	ctt Leu	tca Ser 175	tat Tyr	528	,
ttg Leu	act Thr	gta Val	act Thr 180	acc Thr	cta Leu	tgg Trp	agc Ser	ttc Phe 185	ata Ile	ccc Pro	ttt Phe	act Thr	ctg Leu 190	tcc Ser	ctg Leu	576	5
ata Ile	tct Ser	ttt Phe 195	ctg Leu	atg Met	cta Leu	atc Ile	tgt Cys 200	tct Ser	ctg Leu	tgt Cys	aaa Lys	cat His 205	ctc Leu	aag Lys	aag Lys	624	:
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gca Ala	tto Phe	gac Asp 275	tca Ser	ttc Phe	atc Ile	cta Leu	att Ile 280	tgg Trp	aga Arg	acc Thr	aag Lys	aag Lys 285	cta Leu	aaa Lys	cac His	864
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Thr Ala Leu Ala Val Ser Arg Ile Gly Leu Leu Trp Ser Leu Leu

Asn Trp Tyr Leu Thr Val Leu Asn Pro Ala Phe Tyr Ser Val Glu Leu

Arg Ile Thr Ser Tyr Asn Ala Trp Val Val Thr Asn His Phe Ser Met

Trp Leu Ala Ala Asn Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn

Phe Ser Asn Leu Leu Phe Leu His Leu Lys Arg Arg Val Arg Ser Val

Ile Leu Val Ile Leu Leu Gly Thr Leu Ile Phe Leu Val Cys His Leu 130 135 140

Leu Val Ala Asn Met Asp Glu Ser Met Trp Ala Glu Glu Tyr Glu Gly 145 150 155 160

Asn Met Thr Gly Lys Met Lys Leu Arg Asn Thr Val His Leu Ser Tyr 165 170 175

Leu Thr Val Thr Thr Leu Trp Ser Phe Ile Pro Phe Thr Leu Ser Leu 180 185 190

Ile Ser Phe Leu Met Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys 195 200 205

Met Gln Leu His Gly Glu Gly Ser Gln Asp Leu Ser Thr Lys Val His 210 215 220

Ile Lys Ala Leu Gln Thr Leu Ile Ser Phe Leu Leu Cys Ala Ile 225 230 235 240

Phe Phe Leu Phe Leu Ile Val Ser Val Trp Ser Pro Arg Arg Leu Arg 245 250 255

Asn Asp Pro Val Val Met Val Ser Lys Ala Val Gly Asn Ile Tyr Leu 260 265 270

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ttt Phe	gtt Val	cto Leu	gga Gly 20	aac Asn	ttt Phe	gcc Ala	aat Asn	ggc Gly 25	ttc Phe	ata : Ile	gca Ala	cto Lev	gta Val 30	aat Asn	ttc Phe	96
	•	35		, .	1119	пуs	40	tre	ser	Ser	· Ala	Asp 45	Gln	Ile	ctc Leu	144
act Thr	gct Ala 50	ctg Leu	gtg Val	gtc Val	tcc Ser	aga Arg 55	att	ggt Gly	ttg Leu	cto Leu	tgg Trp	gca Ala	tta Leu	tta Leu	tta Leu	192
aat Asn 65	tgg Trp	tat Tyr	tta Leu	act Thr	gtg Val 70	ttg Leu	aat Asn	cca Pro	gct Ala	ttt Phe 75	tat Tyr	agt Ser	gta Val	gaa Glu	tta Leu 80	240
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	ctt Leu		100		200	261	TTE	105	Tyr	Leu	Leu	Lys	Ile 110	Ala	Asn	336
	tcc Ser	115				Leu	120	neu	пуз	Arg	Arg	Val 125	Arg	Ser	Val	384
	ctg Leu 130				200	135	1111	ьец	тте	Pne	Leu 140	Val	Cys	His	Leu	432
145	gtg Val				150	O.L.u	ner	Mec	rrp	155	GLu	Glu	Tyr	Glu	Gly 160	480
	atg Met			165		шуs	шец	Arg	170	rnr	Val	His	Leu	Ser 175	Tyr	528
	act Thr		180		шец	rrb	ser	185	тте	Pro	Phe	Thr	Leu 190	Ser	Leu	576
ata Ile	tct Ser	ttt Phe 195	ctg Leu	atg Met	cta Leu	atc Ile	tgt Cys 200	tct Ser	ctg Leu	tat Tyr	aaa Lys	cat His 205	ctc Leu	aag Lys	aag Lys	624

	440/44

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ata aaa gct t Ile Lys Ala I 225	eu Gin i	act ctg Thr Leu 230	atc to Ile Se	cc ttc er Phe	ctc t Leu I 235	ttg tt Leu Le	ta tgt eu Cys	gcc Ala	att Ile 240	720
ttc ttt cta t Phe Phe Leu B	tc cta a Phe Leu 1 245	atc gtt Ile Val	tcg gt Ser Va	tt tgg al Trp 250	agt o Ser E	cct aç Pro Aı	gg agg rg Arg	ctg Leu 255	cgg Arg	768
aat gac cca g Asn Asp Pro V	gtt gtc a Val Val N 260	atg gtt Met Val	agc as Ser Ly 26	ys Ala	gtt c Val G	gga aa Gly As	ac ata sn Ile 270	tat Tyr	ctt Leu	816
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Met Ile Thr F	5 Gly Asn 1 20	Phe Ala	Asn Gl	10 ly Phe 5	Ile <i>I</i>	Ala Le	eu Val 30 sp Gln	15 Asn	Phe	·
Met Ile Thr F 1 Phe Val Leu C Ile Asp Trp V	5 Gly Asn 1 20 Val Lys 1	Phe Ala Arg Lys	Asn Gl 25 Lys Il 40	10 ly Phe 5	Ile F	Ala Le Ala As 45	eu Val 30 sp Gln 5	15 Asn Ile	Phe Leu	
Met Ile Thr F 1 Phe Val Leu C Ile Asp Trp V 35	Sly Asn 1 20 Val Lys 1 Val Val S	Phe Ala Arg Lys Ser Arg	Asn Gl 25 Lys II 40 Ile Gl	ly Phe 5 le Ser ly Leu	Ile A	Ala Le Ala As 4! Trp Al	eu Val 30 sp Gln 5	15 Asn Ile Leu	Phe Leu Leu	
Met Ile Thr I Phe Val Leu (Ile Asp Trp (35 Thr Ala Leu (50 Asn Trp Tyr I	Gly Asn 1 20 Val Lys 1 Val Val S	Phe Ala Arg Lys Ser Arg 55 Val Leu 70	Asn Gl 25 Lys II 40 Ile Gl Asn Pi	ly Phe 5 le Ser ly Leu ro Ala	Ile A	Ala Le Ala As 4! Trp Al 60	eu Val 30 sp Gln 5	15 Asn Ile Leu Glu	Phe Leu Leu Leu 80	

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Phe Ser Asn Leu Leu Phe Leu His Leu Lys Arg Arg Val Arg Ser Val 115 120 125

Ile Leu Val Ile Leu Leu Gly Thr Leu Ile Phe Leu Val Cys His Leu 130 135 140

Leu Val Ala Asn Met Asp Glu Ser Met Trp Ala Glu Glu Tyr Glu Gly 145 150 155 160

Asn Met Thr Gly Lys Met Lys Leu Arg Asn Thr Val His Leu Ser Tyr 165 170 175

Leu Thr Val Thr Thr Leu Trp Ser Phe Ile Pro Phe Thr Leu Ser Leu 180 185 190

Ile Ser Phe Leu Met Leu Ile Cys Ser Leu Tyr Lys His Leu Lys Lys 195 200 205

Met Gln Leu His Gly Glu Gly Ser Gln Asp Leu Ser Thr Lys Val His 210 215 220

Ile Lys Ala Leu Gln Thr Leu Ile Ser Phe Leu Leu Cys Ala Ile 225 230 235 240

Phe Phe Leu Phe Leu Ile Val Ser Val Trp Ser Pro Arg Arg Leu Arg 245 250 255

Asn Asp Pro Val Val Met Val Ser Lys Ala Val Gly Asn Ile Tyr Leu 260 265 270

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cgg aga atg ttg Arg Arg Met Leu 50	ttg cct tgt ga Leu Pro Cys As 55	at aag tta ttg gtt agc cta ggg sp Lys Leu Leu Val Ser Leu Gly 60	gcc 192 Ala
tct cgc ttc tgt Ser Arg Phe Cys 65	ctg cag tca gt Leu Gln Ser Va 70	tg gta atg ggt aag acc att tat al Val Met Gly Lys Thr Ile Tyr 75	gtt 240 Val 80
ttc ttg cat ccg a Phe Leu His Pro I	atg gcc ttc co Met Ala Phe Pr 85	ca tac aac cct gta ctg cag ttt co Tyr Asn Pro Val Leu Gln Phe 90 95	
gct ttc cag tgg o Ala Phe Gln Trp A 100	gac ttc ctg aa Asp Phe Leu As	at gct gcc acc tta tgg tcc tct in Ala Ala Thr Leu Trp Ser Ser 105	acc 336 Thr
tgg ctc agt gtc t Trp Leu Ser Val E 115	tc tat tgt gt Phe Tyr Cys Va 12	g aaa att gct acc ttc acc cac l Lys Ile Ala Thr Phe Thr His	cct 384 Pro
gtc ttc ttc tgg c Val Phe Phe Trp I 130	eta aag cac aag eu Lys His Lys 135	g ttg tct ggg tgg cta cca tgg s Leu Ser Gly Trp Leu Pro Trp 140	atg 432 Met
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1	65	g aac tat tta agg aac cat cta n Asn Tyr Leu Arg Asn His Leu 170 175	caa 528 Gln
180		c ata cgg agc tac tgt gag aaa t Tle Arg Ser Tyr Cys Glu Lys 1 185	?he
tat ctc ttc cct ct Tyr Leu Phe Pro Le 195	ta aaa atg att eu Lys Met Ile 200	act tgg aca atg ccc act gct of Thr Trp Thr Met Pro Thr Ala 1	rtc 624 Val
ttt ttc att tgc at Phe Phe Ile Cys Me 210	g att ttg ctc t Ile Leu Leu 215	atc aca tct ctg gga aga cac a Ile Thr Ser Leu Gly Arg His A 220	gg 672 rg
aag aag gct ctc ct Lys Lys Ala Leu Le	t aca acc tca u Thr Thr Ser	gga ttc cga gag ccc agt gtg c Gly Phe Arg Glu Pro Ser Val G	ag 720 ln

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atc Ile	tca Ser	tat Tyr	ttc Phe 260	ctg Leu	tca Ser	ctg Leu	gtg Val	ttc Phe 265	agt Ser	gct Ala	gca Ala	ggt Gly	att Ile 270	ttt Phe	cca Pro	816
cct Pro	ctg Leu	gac Asp 275	ttt Phe	aaa Lys	ttc Phe	tgg Trp	gtg Val 280	tgg Trp	gag Glu	tca Ser	gtg Val	att Ile 285	tat Tyr	ctg Leu	tgt Cys	864
gca Ala	gca Ala 290	gtt Val	cac His	ccc Pro	atc Ile	att Ile 295	ctg Leu	ctc Leu	ttc Phe	agc Ser	aac Asn 300	tgc Cys	agg Arg	ctg Leu	aga Arg	912
gct Ala 305	gtg Val	ctg Leu	aag Lys	agt Ser	cgt Arg 310	cgt Arg	tcc Ser	tca Ser	agg Arg	tgt Cys 315	GJÀ āāā	aca Thr	cct Pro	tga		957

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Arg Arg Met Leu Leu Pro Cys Asp Lys Leu Leu Val Ser Leu Gly Ala 50 60

Ser Arg Phe Cys Leu Gln Ser Val Val Met Gly Lys Thr Ile Tyr Val 65 70 75 80

Phe Leu His Pro Met Ala Phe Pro Tyr Asn Pro Val Leu Gln Phe Leu 85 90 95

Ala Phe Gln Trp Asp Phe Leu Asn Ala Ala Thr Leu Trp Ser Ser Thr 100 105 110

Trp Leu Ser Val Phe Tyr Cys Val Lys Ile Ala Thr Phe Thr His Pro 115 120 125 Val Phe Phe Trp Leu Lys His Lys Leu Ser Gly Trp Leu Pro Trp Met 130 135 140

Leu Phe Ser Ser Val Gly Leu Ser Ser Phe Thr Thr Ile Leu Phe Phe 145 150 155 160

Ile Gly Asn His Arg Met Tyr Gln Asn Tyr Leu Arg Asn His Leu Gln 165 170 175

Pro Trp Asn Val Thr Gly Asp Ser Ile Arg Ser Tyr Cys Glu Lys Phe 180 180

Tyr Leu Phe Pro Leu Lys Met Ile Thr Trp Thr Met Pro Thr Ala Val 195 200 205

Phe Phe Ile Cys Met Ile Leu Leu Ile Thr Ser Leu Gly Arg His Arg 210 215 220

Lys Lys Ala Leu Leu Thr Thr Ser Gly Phe Arg Glu Pro Ser Val Gln 225 230 235

Ala His Ile Lys Ala Leu Leu Ala Leu Leu Ser Phe Ala Met Leu Phe 245 250 255

Ile Ser Tyr Phe Leu Ser Leu Val Phe Ser Ala Ala Gly Ile Phe Pro 260 265 270

Pro Leu Asp Phe Lys Phe Trp Val Trp Glu Ser Val Ile Tyr Leu Cys 275 280 285

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	-	35	3		116	**1T	40	ATG	тел	GТЪ	Val	Glu 45	Trp	Val	cta Leu	144
J	50			200	110	55 55	Asp	гуѕ	ьeu	Leu	Val 60	Ser	Leu	Gly	Ala	192
65			tgt Cys	neu	70	ser	var	vaı	Met	G1y 75	Lys	Thr	Ile	Tyr	Val 80	240
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tgg Trp	ctc Leu	agt Ser 115	gtc Val	ttc Phe	tat Tyr	tgt Cys	gtg Val 120	aaa Lys	att Ile	gct Ala	acc Thr	ttc Phe 125	acc Thr	cac His	cct Pro	384
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ctc Leu 145	ttc Phe	agc Ser	tct Ser	gta Val	ggg Gly 150	ctc Leu	tcc Ser	agc Ser	ttc Phe	acc Thr 155	acc Thr	att Ile	cta Leu	ttt Phe	ttc Phe 160	480
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cct Pro	tgg Trp	aat Asn	gtc Val 180	act Thr	ggc Gly	gat Asp	agc Ser	ata Ile 185	cgg Arg	agc Ser	tac Tyr	tgt Cys	gag Glu 190	aaa Lys	ttc Phe	576
tat Tyr	ctc Leu	ttc Phe 195	cct Pro	cta Leu	aaa Lys	ttg Leu	att Ile 200	act Thr	tgg Trp	aca Thr	atg Met	ccc Pro 205	act Thr	gct Ala	gtc Val	624
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aag	aag	gct	ctc	ctt	aca	acc	tca	gga	ttc	cga	gag	ccc	agt	gtg	cag	720

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atc tca tat ttc c Ile Ser Tyr Phe I 260	ctg tca ctg Leu Ser Leu	gtg ttc agt go Val Phe Ser Al 265	ct gca ggt att ttt la Ala Gly Ile Phe 270	cca 816 Pro
cct ctg gac ttt a Pro Leu Asp Phe I 275	aaa ttc tgg Lys Phe Trp	gtg tgg gag to Val Trp Glu Se 280	ca gtg att tat ctg er Val Ile Tyr Leu 285	tgt 864 Cys
gca gca gtt cac o Ala Ala Val His I 290	ccc atc att Pro Ile Ile 295	ctg ctc ttc ag Leu Leu Phe Se	gc aac tgc agg ctg er Asn Cys Arg Leu 300	aga 912 Arg
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Ala Gly Asn Gly F 35	Phe Ile Thr	Ala Ala Leu Gl 40	ly Val Glu Trp Val 45	Leu
Arg Arg Met Leu I 50	Leu Pro Cys 55	Asp Lys Leu Le	eu Val Ser Leu Gly 60	Ala
Ser Arg Phe Cys I 65	Leu Gln Ser 70	Val Val Met GJ	ly Lys Thr Ile Tyr 5	Val 80
Phe Leu His Pro N	Met Ala Phe 85	Pro Tyr Asn Pr 90	co Val Leu Gln Phe 95	Leu
Ala Phe Gln Trp F	Asp Phe Leu	Asn Ala Ala Tr	nr Leu Trp Ser Ser 110	Thr

Trp Leu Ser Val Phe Tyr Cys Val Lys Ile Ala Thr Phe Thr His Pro 115 120 125

110

Val	Phe 130	Phe	Trp	Leu	Lys	His 135	Lys	Leu	Ser	Gly	Trp 140	Leu	Pro	Trp	Met
Leu 145	Phe	Ser	Ser	Val	Gly 150	Leu	Ser	Ser	Phe	Thr 155	Thr	Ile	Leu	Phe	Phe 160
Ile	Gly	Asn	His	Arg 165	Met	Tyr	Gln	Asn	Tyr 170	Leu	Arg	Asn	His	Leu 175	Gln
Pro	Trp	Asn	Val 180	Thr	Gly	Asp	Ser	Ile 185	Arg	Ser	Tyr	Суз	Glu 190	Lys	Phe
Tyr	Leu	Phe 195	Pro	Leu	Lys	Leu	Ile 200	Thr	Trp	Thr	Met	Pro 205	Thr	Ala	Val
Phe	Phe 210	Ile	Cys	Met	Ile	Leu 215	Leu	Ile	Thr	Ser	Leu 220	Gly	Arg	His	Arg
Lys 225	Lys	Ala	Leu	Leu	Thr 230	Thr	Ser	Gly	Phe	Arg 235	Glu	Pro	Ser	Val	Gln 240
Ala	His	Ile	Lys	Ala 245	Leu	Leu	Ala	Leu	Leu 250	Ser	Phe	Ala	Met	Leu 255	Phe
Ile	Ser	Tyr	Phe 260	Leu	Ser	Leu	Val	Phe 265	Ser	Ala	Ala	Gly	Ile 270	Phe	Pro
Pro	Leu	Asp 275	Phe	Lys	Phe	Trp	Val 280	Trp	Glu	Ser	Val	Ile 285	Tyr	Leu	Cys
Ala	Ala 290	Val	His	Pro	Ile	Ile 295	Leu	Leu	Phe	Ser	Asn 300	Cys	Arg	Leu	Arg
Ala 305	Val	Leu	Lys	Ser	Arg 310	Arg	Ser	Ser	Arg	Cys 315	Gly	Thr	Pro		